SURVEILLANCE of INFECTIOUS INTESTINAL (IID), ZOONOTIC AND VECTORBORNE DISEASE, and OUTBREAKS of INFECTIOUS DISEASE

Feidhmeannacht na Seirbhíse Sláinte
Health Service Executive

cidr

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

Quarter 3 –2009 **December 2009**

This is the third 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.

Table 1. General Outbreaks of Infectious Intestinal Disease (IID) in Quarter 3, 2009

Month	HSE area	Location	No. ill *	No. Hosp.	Date Onset	Suspect mode of transmission	Disease
Jul	E	Creche	17	0	09/06/2009	P - P	AIG
Jul	E	Community outbreak	3	1	20/03/2009	P-P and FB	Shigellosis
Jul	SE	Hospital	9	0	21/06/2009	P - P	Norovirus
Jul	W	Guest house / B and B	9	-	07/07/2009	Not Specified	Norovirus
Jul	SE	Hotel	12	0	18/09/2009	NK	Norovirus
Aug	NE	Residential institution	17	0	-	P - P & AB	Norovirus
Aug	E	School	21	0	13/08/2009	Not Specified	AIG
Aug	MW	Hotel	16	-	26/08/2009	NK	AIG
Aug	M	Hotel	15	0	25/08/2009	WB	AIG
Sep	NE	Comm. Hosp/Long-stay unit	15	10	31/08/2009	P - P	AIG
Sep	S	Coach tour	8	0	-	P - P & AB	Norovirus
Sep	NW	Creche	5	0	-	P - P	AIG
Sep	E	Creche	11	-	26/08/2009	P - P	Norovirus
Sep	E	Other	3	-	28/08/2009	NK	EHEC
Sep	S	Creche	4	1	21/08/2009	Not Specified	EHEC
Sep	NE	Other	16	0	-	P - P & AB	Norovirus
Sep	S	Coach tour	6	0	17/09/2009	P - P	Norovirus
Sep	E	Residential institution	15	-	03/05/2009	P - P	AIG
Sep	W	School	49	0	-	P - P	AIG
Sep	S	Private house	1	1	09/09/2009	P - P	EHEC

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 3, 2009

Month	HSE region	Location	No. ill *	No. Hosp.	Date Onset	Suspect mode of transmission	Disease
Jul	M	Private house	-	0	28/06/2009	Not Specified	EHEC
Jul	NW	Private house	4	1	30/05/2009	P - P	EHEC
Jul	M	Private house	4	1	25/06/2009	Animal contact	EHEC
Jul	S	Private house	2	0	21/06/2009	P-P and WB	EHEC
Jul	S	Private house	3	0	19/06/2009	P - P	EHEC
Jul	W	Private house	9	1	20/07/2009	NK	AIG
Jul	M	Private house	6	0	03/07/2009	P-P and FB	Shigellosis
Jul	M	Private house	1	1	-	Not Specified	EHEC
Jul	NE	Private house	5	0	14/07/2009	P-P and FB	Campylobacter
Jul	NE	Extended family	2	1	28/06/2009	P - P	Salmonellosis
Aug	W	Private house	2	0	06/08/2009	P-P and FB	Campylobacter
Aug	W	Private house	2	0	30/07/2009	P-P and FB	Campylobacter
Aug	E	Private house	3	0	02/08/2009	P - P	Campylobacter
Aug	E	Travel related	3	0	-	NK	Salmonellosis
Aug	S	Private house	1	1	18/07/2009	WB	EHEC
Aug	SE	Private house	1	1	03/08/2009	NK	EHEC
Aug	NE	Extended family	4	0	11/08/2009	NK	EHEC

Sep	E	Travel related	2	0	-	FB	Salmonellosis
Sep	NW	Private house	2	0	20/07/2009	P - P	Salmonellosis
Sep	S	Private house	3	-	26/08/2009	Not Specified	EHEC
Sep	S	Private house	2	1	11/09/2009	P - P	Salmonellosis
Sep	SE	Private house	2	2	18/09/2009	NK	EHEC
Sep	SE	Private house	1	0	13/09/2009	NK	EHEC
Sep	E	Private house	1	1	01/09/2009	P-P and WB	EHEC

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 3, 2009

Month	HSE area	Type of outbreak	Location	No. ill *	No. Hosp.	Date Onset	Suspect mode of transmission	Organism
Jul	E	General	Community outbreak	15	8	26/04/2009	P - P	Hepatitis A
Jul	E	Family	Private house	2	2	-	Not Specified	Hepatitis A
Jul	W	Family	Extended family	3	0	26/06/2009	AB	Pandemic (H1N1) 2009
Jul	E	General	Residential institution	20	0	26/05/2009	P - P	Scabies
Jul	E	Family	Private house	4	0	16/06/2009	P - P	Pandemic (H1N1) 2009
Jul	MW	General	Travel related	3		30/06/2009	Not Specified	Pandemic (H1N1) 2009
Jul	E	Family	Private house	2	0	02/01/2009	P - P	Mumps
Jul	SE	Family	Private house	2	0	21/06/2009	Not Specified	Pandemic (H1N1) 2009
Jul	SE	Family	Private house	2	0	26/06/2009	AB	Pandemic (H1N1) 2009
Jul	SE	Family	Private house	2	0	30/06/2009	AB	Pandemic (H1N1) 2009
Jul	E	Family	Private house	4	0	09/07/2007	P - P	Pandemic (H1N1) 2009
Jul	E	Family	Private house	6	3	08/07/2009	P - P	Pandemic (H1N1) 2009
Jul	SE	Family	Private house	2	1	07/07/2009	P - P	Pandemic (H1N1) 2009
Jul	M	General	Workplace	30	0	12/07/2009	P-P and AB	Coronavirus
Jul	W	General	Hotel	3	0	23/04/2009	P-P and AB	Pandemic (H1N1) 2009
Jul	M	Family	Private house	3	0	18/07/2009	P-P and AB	Pandemic (H1N1) 2009
Jul	W	General	School	6	0	23/07/2009	P-P and AB	Pandemic (H1N1) 2009
Jul	S	General	University/College	3	0	17/06/2009	P - P	Pandemic (H1N1) 2009
Jul	W	General	School	4	0	-	P-P and AB	Pandemic (H1N1) 2009
Aug	S	Family	Private house	3	0	19/07/2009	P - P	Pandemic (H1N1) 2009
Aug	NW	General	School	150	0	03/08/2009	P - P	Pandemic (H1N1) 2009
Aug	W	General	University/College	30	0	10/08/2009	P-P and AB	Pandemic (H1N1) 2009
Aug	W	Family	Private house	4	0	05/08/2009	P - P	Pandemic (H1N1) 2009
Aug	NW	General	School	30	0	-	P - P	Pandemic (H1N1) 2009
Aug	NW	General	School	40	0	-	P - P	Pandemic (H1N1) 2009
Aug	S	Family	Extended family	4	1	28/07/2009	P - P	Pandemic (H1N1) 2009
Aug	SE	General	University/College	35	0	-	AB	Pandemic (H1N1) 2009
Aug	E	General	Comm. Hosp/Long-stay unit	5	0	-	P-P and AB	Pandemic (H1N1) 2009
Aug	NE	General	Other	6	0	10/08/2009	P - P	Mumps
Aug	W	General	Creche	4	0	-	P-P and AB	Pandemic (H1N1) 2009
Aug	MW	Family	Private house	3	1	10/08/2009	Not Specified	Pandemic (H1N1) 2009
Aug	MW	General	Workplace	3	-	25/08/2009	Not Specified	Pandemic (H1N1) 2009
Sep	S	General	Other	3	0	19/08/2009	P - P	Pandemic (H1N1) 2009

Sep	S	Family	Private house	3	0	26/08/2009	P - P	Pandemic (H1N1) 2009
Sep	W	Family	Private house	4	0	29/08/2009	P-P and AB	Pandemic (H1N1) 2009
Sep	W	General	School	103	1	05/09/2009	P-P and AB	Pandemic (H1N1) 2009
Sep	W	General	Creche	5	0	-	P-P and AB	Pandemic (H1N1) 2009
Sep	NE	General	School	24	0	04/09/2009	P - P	Pandemic (H1N1) 2009
Sep	NE	General	School	27	1	06/09/2009	P - P	Pandemic (H1N1) 2009
Sep	NE	General	School	70	0	09/09/2009	P - P	Pandemic (H1N1) 2009
Sep	S	General	Extended family	5	2	12/09/2009	Not Specified	Measles
Sep	NE	General	School	-	-	11/09/2009	P - P	Pandemic (H1N1) 2009
Sep	NE	General	School	75	0	13/09/2009	Other	Pandemic (H1N1) 2009
Sep	NE	General	School	110	0	15/09/2009	P - P	Pandemic (H1N1) 2009
Sep	NE	General	School	-	-	14/09/2009	P-P and AB	Pandemic (H1N1) 2009
Sep	NW	Family	Private house	3	1	06/09/2009	P - P	Pandemic (H1N1) 2009
Sep	NW	Family	Private house	4	1	11/09/2009	P - P	Pandemic (H1N1) 2009
Sep	NW	Family	Private house	3	1	13/09/2009	P - P	Pandemic (H1N1) 2009
Sep	S	General	School	5	0	-	P - P	Influenza-like illness
Sep	W	General	School	120	0	-	Not Specified	Pandemic (H1N1) 2009
Sep	MW	General	School	6	0	15/09/2009	Not Specified	Pandemic (H1N1) 2009
Sep	E	Family	Private house	4	3	13/09/2009	P - P	Pandemic (H1N1) 2009
Sep	W	General	School	95	0	12/09/2009	P - P	Pandemic (H1N1) 2009
Sep	E	General	Residential institution	29	-	-	P-P and AB	Pandemic (H1N1) 2009
Sep	MW	General	University/College	-	0	-	Not Specified	Pandemic (H1N1) 2009
Sep	E	General	School	25	0	-	P-P and AB	Pandemic (H1N1) 2009
Sep	E	General	School	22	0	-	Not Specified	Pandemic (H1N1) 2009
Sep	NW	General	School	30	1	05/09/2009	P - P	Pandemic (H1N1) 2009
Sep	NE	General	School	40	-	15/09/2009	P-P and AB	Pandemic (H1N1) 2009
Sep	NE	General	School	24	0	17/09/2009	P - P	Pandemic (H1N1) 2009
Sep	NE	General	Residential institution	15	2	24/09/2009	Other	Pandemic (H1N1) 2009
Sep	S	General	School	90	0	-	P - P	Pandemic (H1N1) 2009
Sep	NW	General	Residential institution	21	0	27/09/2009	P - P	Pandemic (H1N1) 2009
Sep	W	Family	Private house	2	1	18/09/2009	P - P	Pandemic (H1N1) 2009

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 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'.

Tables 1 and 2 present a line listing of all general and family outbreaks of IID reported to HPSC in the third quarter of 2009. There were 20 general and 24 family IID outbreaks reported during this period, resulting in at least 317 people being ill.

Norovirus (n = 8) and AIG (n = 8) were responsible for the majority of general outbreaks of IID (80% of all general outbreaks).

The most common cause of family outbreaks of IID was EHEC, with thirteen outbreaks (54% of all family outbreaks) caused by this pathogen. The other pathogens responsible for family outbreaks were AIG, campylobacter, salmonellosis and shigellosis. (Table 2).

Many general IID outbreaks were transmitted person-to-person (45%). Four general outbreaks (19%) were reported to have occurred in healthcare settings, i.e. hospitals or residential institutions, during this period.

There were sixty-four non-IID outbreaks reported during Quarter 3 - see Table 3.

Table 4 outlines the outbreak rate per HSE-area for outbreaks notified during Q3 2009.

Table 4. No. of infectious disease outbreaks per HSE region, Q3 2009

HSE Area	No. of outbreaks	Rate per 100,000 population
E	22	1.4
M	7	2.8
MW	6	1.7
NE	16	4.1
NW	12	5.1
SE	10	2.2
S	17	2.7
W	18	4.3
Total	**108**	**2.5**

NOTIFICATIONS OF INFECTIOUS INTESTINAL, ZOONOTIC AND VECTORBORNE DISEASE

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

Table 5. Intestinal Infectious, Zoonotic and Vectorborne Disease Notifications Quarter 3, 2009 by HSE-Area

Infectious Intestinal Disease	E	M	MW	NE	NW	SE	S	W	Total
Acute infectious gastroenteritis* (incl. rotavirus & *C. difficile*)	202	23	65	24	46	89	74	69	**592**
Bacillus cereus foodborne infection/intoxication	0	0	0	0	0	0	0	0	**0**
Botulism	0	0	0	0	0	0	0	0	**0**
Campylobacter infection	199	31	42	39	25	62	85	70	**553**
Cholera	0	0	0	0	0	0	0	0	**0**
Clostridium perfringens (type A) food-borne disease	0	0	0	0	0	0	0	0	**0**
Cryptosporidiosis	4	12	10	10	4	17	15	16	**88**
Enterohaemorrhagic *Escherichia coli*	12	11	13	5	10	19	25	6	**101**
Giardiasis	7	0	0	1	0	0	3	5	**16**
Listeriosis	1	1	0	0	0	0	0	0	**2**
Noroviral infection	19	0	10	11	2	4	14	9	**69**
Paratyphoid	~	~	~	~	~	~	~	~	**4**
Salmonellosis	45	7	5	8	13	12	12	11	**113**
Shigellosis	11	4	1	3	0	2	5	2	**28**
Staphylococcal food poisoning	1	0	0	0	0	0	0	0	**1**
Typhoid	~	~	~	~	~	~	~	~	**4**
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	2	0	1	0	0	2	1	0	**6**
Plague	0	0	0	0	0	0	0	0	**0**
Q Fever	0	0	0	0	0	0	3	1	**4**
Rabies	0	0	0	0	0	0	0	0	**0**
Toxoplasmosis	3	1	1	0	0	0	5	0	**10**
Trichinosis	0	0	0	0	0	0	0	0	**0**
Typhus	0	0	0	0	0	0	0	0	**0**
Vectorborne Disease									
Malaria	19	5	3	4	1	1	5	7	**45**

*Since May 4th 2008, the category Acute Infectious Gastroenteritis (AIG) 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 third quarter of 2009. Comparison of trends with previous years is shown in Figure 1.

Table 6. Salmonellosis Notifications by HSE-Area and Month, Q3 2009

Month	E	M	MW	NE	NW	SE	S	W	Total
Jul	16	2	1	4	3	4	3	3	**36**
Aug	14	1	3	2	5	7	3	4	**39**
Sep	15	4	1	2	5	1	6	4	**38**
Total	**45**	**7**	**5**	**8**	**13**	**12**	**12**	**11**	**113**

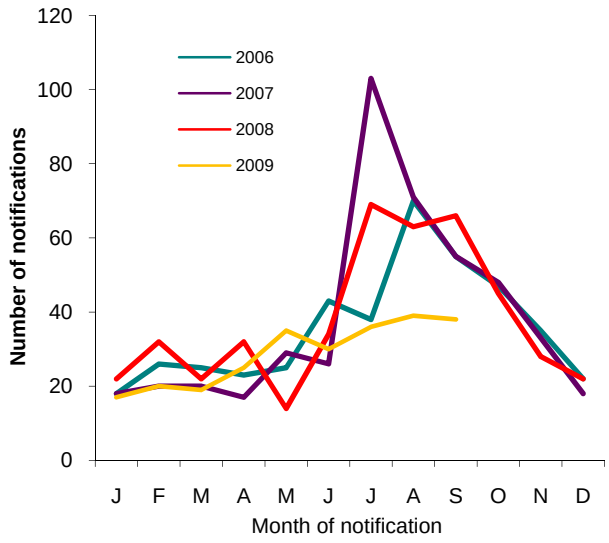

Figure 1. Seasonal Distribution of Human Salmonellosis Notifications, 2006 to end quarter 3 2009

Table 7 shows the *S. enterica* isolates typed by the NSRL in the third quarter of 2009 (n=124). The commonest human serotypes isolated were *S.* Enteritidis (n= 41 [33%]) and *S.* Typhimurium (n=28 [23%]).

Forty-four (34%) *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 3, 2009 (Data are provided courtesy of Prof. Martin Cormican and staff, NSRL).

Serotype	E	M	MW	NE	NW	SE	S	W	Total
4,5,12:i:-	1	1	1	0	2	1	1	1	8
Agama	0	0	0	0	0	0	0	1	1
Agona	0	0	0	0	0	0	0	1	1
Anatum	1	0	0	0	0	0	0	0	1
Bareilly	1	0	0	0	0	0	0	0	1
Bredeney	2	0	0	1	0	0	1	0	4
Enteritidis	17	3	2	3	4	8	1	3	41
IIIb 61:k:z35	1	0	0	0	0	0	0	0	1
Infantis	0	0	0	0	0	1	0	0	1
Java	2	0	0	0	1	0	1	0	4
Johannesburg	1	0	0	0	0	0	0	0	1
Kentucky	0	0	0	0	0	0	0	1	1
Kintambo	0	0	0	0	0	0	0	1	1
Mbandaka	0	1	0	0	0	0	0	0	1
Mikawasima	1	0	0	0	0	0	0	0	1
Monschaui	1	0	0	0	0	0	0	0	1
Napoli	1	0	0	0	0	0	1	0	2
Newport	1	0	0	0	0	0	1	0	2
Oranienburg	1	0	0	0	0	0	0	0	1
Paratyphi A	~	~	~	~	~	~	~	~	4
Paratyphi B	~	~	~	~	~	~	~	~	1
Penarth	3	0	0	0	0	0	0	0	3
Pensecola	0	0	0	0	1	0	0	0	1
Poona	1	0	0	0	0	0	0	0	1
Rissen	0	0	0	0	0	0	1	0	1
Saintpaul	0	1	0	0	0	0	0	0	1
Sandiego	1	0	0	0	0	0	0	0	1
Stanley	1	0	0	0	0	0	0	0	1
Szentes	1	0	0	0	0	0	0	0	1
Typhi	~	~	~	~	~	~	~	~	5
Typhimurium	10	1	1	4	5	1	3	3	28
Unnamed	1	0	0	0	0	0	0	0	1
Virchow	1	0	0	0	0	0	0	0	1
Total	**56**	**7**	**6**	**8**	**13**	**12**	**11**	**11**	**124**

S. Typhi and S. Paratyphi

There were four notifications of *S. Typhi*, two associated with travel to India, one to Pakistan and one with travel not specified. There were three notifications of *S. Paratyphi* A, two associated with travel to India and one to Bangladesh, and one notification of *S. Paratyphi* B associated with travel to Chile.

Outbreaks of salmonellosis

There were five outbreaks of salmonellosis reported in Q3 2009, two of which were travel-related (Tables 1&2).

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 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.

One hundred and one EHEC were notified in this quarter, 95 of which were confirmed or probable VTEC (Table 8). This compares with 97 VTEC cases notified in Q3 2008 and 107 in Q3 2007 (Figure 2). Table 8 shows the number of VTEC cases reported by serogroup and month, Q3 2009.

Table 8. Confirmed and Probable VTEC Notified by Serogroup and Month, Q3 2009

Month	O157	O26	Other	Total
Jul	24	3	0	**27**
Aug	23	0	1	**24**
Sep	29	5	10*	**44**
Total	**76**	**8**	**11**	**95**

*Includes 3 cases diagnosed as probable cases on the basis of detection of *vt* genes in stool

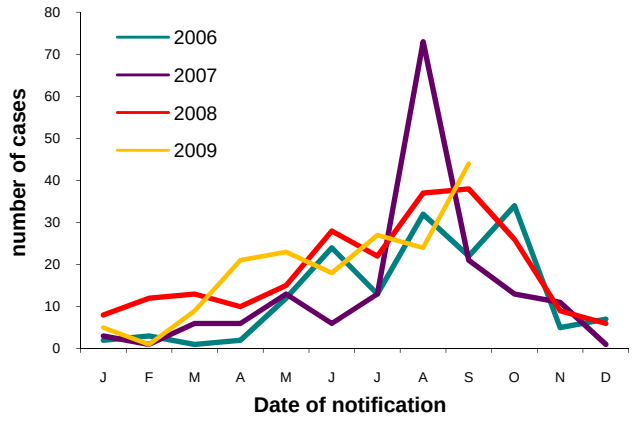

Figure 2. Seasonal distribution of confirmed and probable VTEC cases notified 2006 to end quarter 3 2009

Ten cases notified during this quarter were reported as having developed HUS –six were infected with *E. coli* O157, two with *E. coli* O26, and two with *E. coli* O145.

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 Q3 2009.

Table 9. Phage Types of VTEC O157 isolates referred to the HSE DML Public Health Laboratory, Cherry Orchard Hospital in Q3 2009. (Data are provided courtesy of Dr. Eleanor McNamara and Dr. Anne Carroll).

Phage type	Number of isolates
32	42
21/28	8
8	6
31	6
14	3
RDNC	3
Other	2
Pending	6
Total	**76**

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 Q3 2009. (Data are provided courtesy of Dr. Eleanor McNamara and Dr. Anne Carroll).

Serogroup	*vt1*	*vt2*	*vt1+vt2*	Total
O157	0	67	9	**76**
O26	3	1	4	**8**
Other	6	4	1	**11**
Total	**9**	**72**	**14**	**95**

Outbreaks of VTEC infection

During this quarter, three general and 13 family outbreaks of VTEC infection were reported (see Tables 1 & 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 third quarter of 2009 are shown in Table 11. The number of cases notified this quarter is similar to quarter 3 in previous years (Figure 3).

Table 11. Campylobacter Notifications by HSE-Area and Month, Q3 2009

Month	E	M	MW	NE	NW	SE	S	W	Total
Jul	90	12	17	15	8	27	35	27	**231**
Aug	49	9	9	17	7	17	15	23	**146**
Sep	60	10	16	7	10	18	35	20	**176**
Total	**199**	**31**	**42**	**39**	**25**	**62**	**85**	**70**	**553**

Outbreaks of Campylobacter infection

There were four family outbreaks of campylobacteriosis reported in Q3 2009 (Table 2).

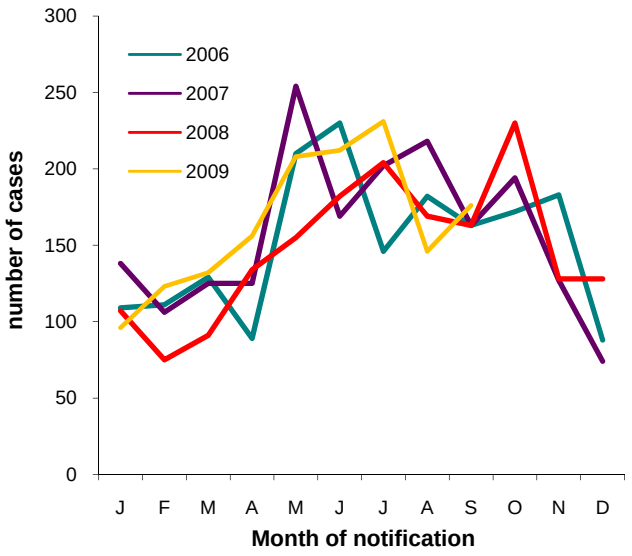

Figure 3. Seasonal distribution of Campylobacter notifications 2006 to end quarter 3 2009

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 Q3 2009, 88 cases of cryptosporidiosis were notified (Table 12), compared to 78 in the same period last year and 93 in Q3 2007 (Figure 4).

Table 12. Cryptosporidiosis Notifications by HSE-Area and Month, Q3 2009

Month	E	M	MW	NE	NW	SE	S	W	Total
Jul	2	5	4	3	2	5	7	7	**35**
Aug	1	1	2	4	1	1	1	3	**14**
Sep	1	6	4	3	1	11	7	6	**39**
Total	**4**	**12**	**10**	**10**	**4**	**17**	**15**	**16**	**88**

Outbreaks of cryptosporidiosis

There were no outbreaks of cryptosporidiosis reported in Quarter 3, (Tables 1&2).

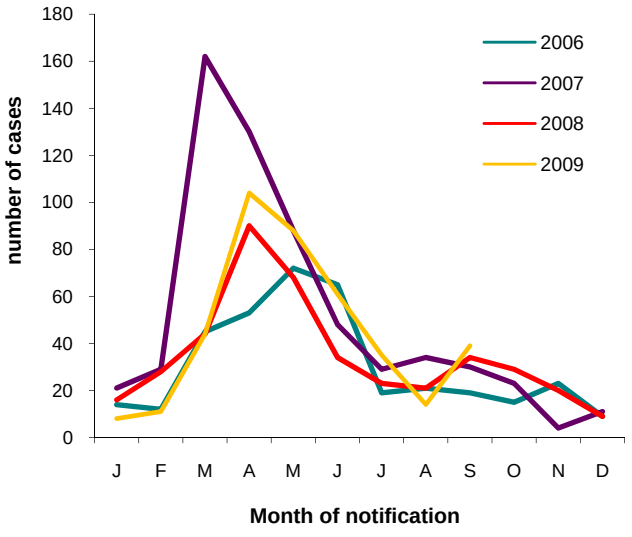

Figure 4. Seasonal distribution of cryptosporidiosis notifications 2006 to end quarter 3 2009

NOROVIRUS

Human noroviral infection became a notifiable disease on January 1st 2004. There were 69 cases reported in the third 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, Q3 2009

Month	E	M	MW	NE	NW	SE	S	W	Total
Jul	10	0	2	3	1	2	1	9	**28**
Aug	3	0	0	5	0	2	5	0	**15**
Sep	6	0	8	3	1	0	8	0	**26**
Total	**19**	**0**	**10**	**11**	**2**	**4**	**14**	**9**	**69**

Norovirus outbreaks

Norovirus or suspect viral aetiology is the commonest cause of outbreaks of acute gastroenteritis in Ireland. In the third quarter of 2009 there were eight outbreaks confirmed as being caused by this virus, involving at least 88 people becoming ill, as outlined in Table 1. The seasonal trend is outlined in Figure 5.

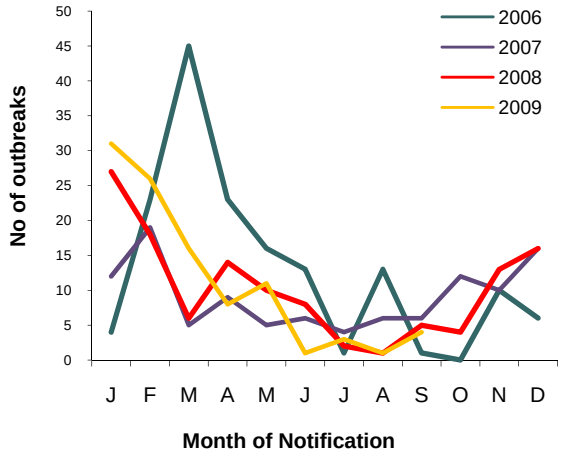

Figure 5. Seasonal distribution of confirmed norovirus outbreaks, 2006 to end quarter 3 2009.

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.

There were two cases of listeriosis notified in Q3 2009, compared to three in quarter 3 2008 and eleven in quarter 3 2007. Both were non-pregnancy related adult cases, and both isolates were referred to the NSRL. Table 14 lists the serotypes for these isolates.

Table 14: Serotypes of Q3 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
4b	1
Not yet serotyped	1

SHIGELLA

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

During Q3 2009, 28 cases of shigellosis were notified (Table 5). This compares with 19 cases notified as shigellosis in Q3 in 2008 and 17 in Q3 2007. Fourteen cases were reported as *S. sonnei*, eight as *S. flexneri*, one as *S. boydii*, one as *S. dysenteriae* and four were not specified.

During this quarter, fourteen cases (50%) were reported to have acquired their illness abroad, four each in Egypt and Morocco, two in Nigeria, and one each in Portugal, India, Tunisia and Nicaragua. Country of infection was reported as Ireland for four further cases, and as 'not specified' or 'unknown' for the remaining ten cases.

Outbreaks of shigellosis

There were two outbreaks of shigellosis reported in Q3 2009 (Tables 1 & 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 3 2009, 16 cases of giardiasis were notified (Table 5); this compares with 14 cases notified in Q3 2008 and ten in Q3 2007.

Outbreaks of giardiasis

There were no outbreaks of giardiasis notified in Q3 2009 (Tables 1&2).

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)'.

There was one case of staphylococcal food poisoning notified during this quarter.

ACUTE INFECTIOUS GASTROENTERITIS incl. ROTAVIRUS

Since 1st January 2004, there is a notifiable disease category termed 'Acute Infectious Gastroenteritis'. Until May 3rd 2008, this included all unspecified causes of gastroenteritis and also specifically, gastroenteritis due to rotavirus. Since May 4th 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.

Table 15. Rotaviral Infections Notified under the Category of 'Acute Infectious Gastroenteritis' by HSE-Area and Month, Q3 2009

Month	E	M	MW	NE	NW	SE	S	W	Total
Jul	4	6	6	3	14	10	12	7	**62**
Aug	4	1	0	0	4	2	7	6	**24**
Sep	9	3	0	1	2	5	2	4	**26**
Total	**17**	**10**	**6**	**4**	**20**	**17**	**21**	**17**	**112**

During Quarter 3 2009, there were 592 notifications of acute infectious gastroenteritis. 112 of these (19%) were reported as rotavirus (as shown in Table 15 & Figure 6).

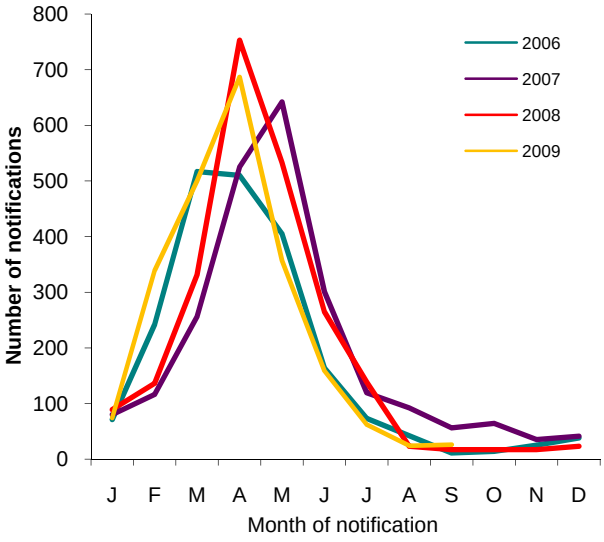

Figure 6. Seasonal distribution of rotavirus notifications 2006 to end quarter 3 2009

Outbreaks of Rotavirus

There were no outbreaks of rotavirus this quarter (Tables 1 & 2).

NON-IID ZOONOTIC DISEASES

Non-IID zoonoses now notifiable include: anthrax, brucellosis, echinococcosis, leptospirosis, plague, Q fever, toxoplasmosis, trichinosis, typhus and rabies. The Q3 2009 notifications of these zoonotic diseases are reported by HSE-Area in Table 5.

Ten cases of toxoplasmosis were notified in this quarter. This compares with eight cases notified in the same period in 2008 and eleven cases in Q3 2007.

There were no cases of brucellosis reported during this quarter compared with none in Q3 2008 and ten in Q3 2007.

Six cases of leptospirosis were notified in Q3 2009; this compares with nine in Q3 2008 and ten in Q3 2007. Two were reported as associated with leisure activities, and one was reported as occupational; no exposure information was provided for the remaining three cases.

There were four cases of Q fever notified this quarter, compared to three in Q3 in 2008 and five in Q3 2007.

MALARIA

Malaria is a notifiable disease for many years. The Q3 2009 notifications are reported in Table 5 by HSE-Area.

Forty-five cases of malaria were notified in Q3 2009. This compares with 31 cases reported in Q3 2008 and 31 in Q3 2007.

Thirty-six cases were reported as *P. falciparum*, four as *P. vivax*, two as *P. ovale*, and species was not specified for three cases.

Twenty-eight cases were exposed in Sub-Saharan Africa and three in Asia. No data were provided on country of infection for the remaining 14 cases.

The reason for travel for 25 cases was reported as visiting family in country of origin. One case was exposed during holiday travel, four were new entrants, one was an Irish citizen living abroad, and one was a child visiting parents. The reason for travel was not specified/unknown for 13 cases.

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