

SURVEILLANCE of INFECTIOUS INTESTINAL (IID), ZONOTIC AND VECTORBORNE DISEASE, and OUTBREAKS of INFECTIOUS DISEASE IN IRELAND



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

Quarter 2 –2012

October 2012

This is the second quarterly report for 2012 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 2, 2012

Month	HSE area	Location	No. ill *	No. Hosp.	Date Onset	Suspect mode of transmission	Disease
Apr	MW	Hospital	6	6	22/03/2012	P-P	Norovirus
Apr	E	Residential institution	26		03/04/2012	P-P	Norovirus
Apr	E	Residential institution	13		02/04/2012	P-P	Norovirus
Apr	MW	Comm. Hosp/Long-stay unit	20	0		P-P	Norovirus
Apr	E	Residential institution	36		04/04/2012	P-P	Norovirus
Apr	S	Hospital	3			Not Specified	Norovirus
Apr	NE	Comm. Hosp/Long-stay unit	8			P-P & AB	Norovirus
Apr	S	Residential institution	5	0	27/03/2012	P-P & AB	AIG
Apr	SE	Comm. Hosp/Long-stay unit	13	0	08/04/2012	P-P	AIG
Apr	M	Residential institution	7	0		P-P	Norovirus
Apr	E	Residential institution	14		21/04/2012	P-P	Norovirus
Apr	E	Hospital	10		19/04/2012	P-P	Norovirus
Apr	NW	Hospital	24	15		P-P & AB	Norovirus
May	M	Creche	5	2	09/04/2012	Unknown	VTEC
May	E	Residential institution	31		22/04/2012	P-P	AIG
May	W	Comm. Hosp/Long-stay unit	12	1	26/04/2012	P-P	Suspected Norovirus
May	E	Residential institution	17		08/05/2012	P-P	Norovirus
May	SE	Residential institution	17		26/04/2012	P-P	Norovirus
May	SE	Hospital	11		08/05/2012	P-P	Norovirus
May	SE	Residential institution	48		10/05/2012	P-P	AIG
May	SE	Residential institution	24		10/05/2012	P-P	AIG
May	E	Residential institution	11		19/05/2012	Unknown	Norovirus
May	E	Hospital	6	6	18/05/2012	Unknown	Clostridium Difficile
May	SE	Hotel	12	0	22/05/2012	Not Specified	AIG
May	SE	Residential institution	16		22/05/2012	P-P	AIG
May	M	Creche	24	1	03/05/2012	Not Specified	VTEC
Jun	E	Comm. Hosp/Long-stay unit	9	0	20/05/2012	P-P	AIG
Jun	S	Extended family	2	1	20/05/2012	P-P	VTEC
Jun	S	Other	6		13/05/2012	Not Specified	VTEC
Jun	NW	Not Specified	14	1	19/05/2012	Not Specified	Norovirus
Jun	NE	Residential institution	2	0		Unknown	Clostridium Difficile
Jun	E	Residential institution	7		08/06/2012	Not Specified	Norovirus
Jun	S	Creche	2		30/04/2012	Not Specified	VTEC
Jun	E	Residential institution	26		13/06/2012	P-P	Norovirus
Jun	M	Community outbreak	2	1	15/06/2012	WB & Animal	VTEC
Jun	M	Residential institution	5	0		AB	Norovirus
Jun	W	Creche	2	0	09/06/2012	Unknown	VTEC
Jun	MW	Private house	1	0	24/05/2012	P-P	VTEC

P-P denotes Person-to-Person transmission, FB denotes foodborne, WB denotes waterborne; AB denotes airborne; AIG denotes Acute Infectious Gastroenteritis (unspecified); VTEC denotes infection with Verotoxigenic *E. coli*; NK=unknown

* Total numbers ill does not include asymptomatic cases

Table 2. Family Outbreaks of Infectious Intestinal Disease (IID) in Quarter 2, 2012

Month	HSE region	Location	No. ill *	No. Hosp.	Date Onset	Suspect mode of transmission	Disease
Apr	SE	Private house	2	0	08/03/2012	P-P	Cryptosporidiosis
Apr	W	Private house	2	0	18/03/2012	Unknown	Cryptosporidiosis
Apr	SE	Private house	4	0	13/03/2012	Animal contact	Cryptosporidiosis
Apr	W	Private house	3	1	-	Unknown	VTEC
Apr	W	Private house	3	0	23/03/2012	Unknown	VTEC
Apr	M	Private house	1	1	23/03/2012	Unknown	Cryptosporidiosis
Apr	W	Private house	2	-	07/04/2012	Unknown	Campylobacter
Apr	S	Private house	2	-	15/03/2011	Not Specified	Cryptosporidiosis
Apr	NW	Private house	2	1	08/04/2012	Not Specified	VTEC
Apr	NE	Private house	5	1	26/03/2012	P-P & Animal	Cryptosporidiosis
Apr	NW	Private house	2	2	09/04/2012	Not Specified	Rotavirus
Apr	M	Private house	2	1	01/04/2012	P-P	Cryptosporidiosis
Apr	M	Private house	2	1	11/04/2012	Unknown	Cryptosporidiosis
Apr	NE	Private house	2	2	-	P-P	Rotavirus
Apr	NW	Private house	2	-	-	P-P	Cryptosporidiosis
May	NW	Private house	1	0	-	P-P	VTEC
May	W	Private house	1	2	-	Not Specified	VTEC
May	NW	Private house	1	1	19/04/2012	P-P	VTEC
May	NW	Private house	3	0	22/04/2012	P-P	VTEC
May	W	Private house	2	2	-	P-P	Rotavirus
May	E	Private house	2	1	02/05/2012	Unknown	Cryptosporidiosis
May	M	Private house	2	-	-	P-P & WB	Cryptosporidiosis
May	W	Private house	1	0	13/05/2012	Unknown	VTEC
May	NW	Private house	1	0	28/04/2012	P-P	VTEC
May	NW	Private house	2	1	21/04/2012	P-P	Cryptosporidiosis
Jun	W	Private house	3	0	23/05/2012	Unknown	VTEC
Jun	M	Private house	2	2	26/05/2012	Not Specified	VTEC
Jun	W	Private house	2	2	30/05/2012	Unknown	Cryptosporidiosis
Jun	W	Private house	3	0	25/05/2012	Unknown	VTEC
Jun	E	Travel related	20	-	04/06/2012	FB	AIG
Jun	NW	Travel related	2	0	28/05/2012	FB	Salmonellosis
Jun	NW	Private house	2	2	-	P-P	Rotavirus
Jun	NW	Private house	2	0	-	P-P	VTEC
Jun	NW	Travel related	3	1	27/05/2012	P-P & FB	Salmonellosis
Jun	S	Private house	2	-	08/05/2012	Not Specified	VTEC
Jun	E	Private house	1	-	05/06/2012	FB & Animal	VTEC
Jun	W	Private house	2	2	03/06/2012	Unknown	Salmonellosis
Jun	M	Private house	1	-	09/06/2012	Unknown	VTEC
Jun	M	Not Specified	4	0	12/06/2012	FB	VTEC
Jun	E	Private house	2	1	29/05/2012	P-P & FB	VTEC
Jun	E	Private house	1	-	12/06/2012	Not Specified	VTEC
Jun	NW	Private house	2	1	16/06/2012	P-P	Rotavirus
Jun	E	Private house	2	-	14/06/2012	Unknown	VTEC

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

* Total numbers ill does not include asymptomatic cases

Table 3. Non-IID Outbreaks in Quarter 2, 2012

Month	HSE area	Type of outbreak	Location	No. ill *	No. Hosp.	Date Onset	Suspect mode of transmission	Organism
Apr	E	General	Other	8	1	-	P-P	Sarcoptes scabiei
Apr	NW	General	Residential institution	35	4	-	P-P	Influenza
Apr	SE	Family	Private house	2	0	23/12/2011	P-P	Pertussis
Apr	NW	General	Community outbreak	60	-	-	P-P	Pertussis
Apr	NW	General	Comm. Hosp/Long-stay unit	4	2	-	P-P	Query Respiratory like illness
Apr	M	Family	Private house	3	1	01/11/2011	P-P	Tuberculosis
Apr	NE	General	Comm. Hosp/Long-stay unit	13	-	30/03/2012	Not Specified	Influenza
Apr	NE	General	Comm. Hosp/Long-stay unit	11	-	03/04/2012	Not Specified	Influenza
Apr	S	Family	Private house	2	-	15/02/2012	Not Specified	Pertussis
Apr	M	General	Residential institution	14	2	04/04/2012	P-P	Influenza
Apr	MW	Family	Private house	2	2	-	P-P	Enterovirus
Apr	E	General	Private house	3	0	14/04/2012	P-P & AB	Possible mumps
Apr	E	Family	Private house	2	1	01/03/2012	P-P	Pertussis
Apr	W	General	Comm. Hosp/Long-stay unit	47	7	15/04/2012	P-P	Influenza
Apr	W	General	Comm. Hosp/Long-stay unit	13	0	20/04/2012	P-P	Influenza-like illness
Apr	E	General	Residential institution	14	1	19/04/2012	P-P	Human metapneumovirus
Apr	NE	General	Residential institution	11	0	-	P-P & AB	Influenza
Apr	M	General	Residential institution	29	0	28/04/2012	P-P	Influenza
May	S	Family	Private house	6	0	09/04/2012	P-P	Measles
May	E	Family	Private house	3	1	24/04/2012	P-P	Group A Streptococcus
May	E	Family	Private house	2	0	02/04/2012	P-P	Pertussis
May	W	General	Creche	3	0	08/03/2012	P-P	Pertussis
May	S	Family	Private house	4	1	16/04/2012	P-P	Pertussis
May	S	General	School	53	3	25/04/2012	Not Specified	Measles
May	E	General	School	12	0	27/02/2012	P-P & AB	Suspect Parvovirus
May	E	General	Comm. Hosp/Long-stay unit	7	-	09/05/2012	P-P	Influenza
May	W	Family	Private house	2	0	10/03/2012	P-P	Pertussis
May	S	General	Comm. Hosp/Long-stay unit	13	-	11/05/2012	P-P & AB	Respiratory Illness
May	W	General	Creche	5	0	10/05/2012	P-P	Scarlet fever
May	E	Family	Private house	2	0	30/04/2012	P-P & AB	Pertussis
May	S	Family	Extended family	2	-	08/04/2012	P-P	Pertussis
May	W	Family	Private house	2	0	06/04/2012	P-P	Pertussis
Jun	E	General	Creche	23	-	02/05/2012	P-P	Varicella
Jun	E	General	Creche	7	-	28/05/2012	P-P	Hand Foot and Mouth Disease
Jun	S	Family	Private house	3	-	-	Not Specified	Tuberculosis
Jun	SE	Family	Private house	7	0	19/05/2012	P-P	Pertussis
Jun	SE	General	School	6	-	-	Not Specified	Suspected slapped cheek syndrome
Jun	S	General	Hospital	4	4	26/05/2012	P-P & AB	Influenza
Jun	SE	Family	Private house	4	0	15/04/2012	P-P & AB	Pertussis

Jun	E	Family	Private house	2	0	27/04/2012	P-P	Pertussis
Jun	E	Family	Private house	3	1	02/06/2012	P-P	Pertussis

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

* Total numbers ill does not include asymptomatic cases

Since July 2001, outbreaks have been reported to HPSC. Preliminary information is provided by a public health professional when the outbreak is first notified. Further information is provided 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 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 second quarter of 2012. There were thirty-eight general and forty-three family IID outbreaks reported during this period, resulting in at least 605 people being ill.

Norovirus (n=19) was responsible for the majority of general outbreaks of IID (50% of all general outbreaks).

The most common causes of family outbreaks of IID were VTEC (n=20) [46%] and cryptosporidiosis (n=13) [30%]. The other diseases responsible for family outbreaks were acute infectious gastroenteritis (unspecified), campylobacteriosis, rotavirus and salmonellosis. (Table 2).

Twenty-four general IID outbreaks were transmitted person-to-person (50%). Twenty-eight general outbreaks (74%) were reported to have occurred in healthcare settings, i.e. hospitals or residential institutions, during this period.

There were forty-one non-IID outbreaks reported during Quarter 2 - see Table 3.

Table 4 outlines the outbreak rate per HSE-area for outbreaks notified during Q2 2012.

Table 4. Number of Infectious Disease Outbreaks by HSE Area, Q2 2012

HSE Area	No. of outbreaks	Rate per 100,000 population
E	31	2.0
M	15	5.3
MW	4	1.1
NE	7	1.6
NW	18	7.0
SE	13	3.0
S	15	2.3
W	19	4.3
Total	122	2.7

NOTIFICATIONS OF INFECTIOUS INTESTINAL, ZONOTIC AND VECTORBORNE DISEASE

The number of notifications of infectious intestinal, zoonotic and vectorborne disease by HSE-Area for the second quarter of 2012 is shown in Table 5.

Table 5. Intestinal Infectious, Zoonotic and Vectorborne Disease Notifications Quarter 2, 2012 by HSE-Area

Infectious Intestinal Disease	E	M	MW	NE	NW	SE	S	W	Total
<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	203	63	71	56	40	89	104	93	719
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	10	28	34	20	27	47	27	43	236
Giardiasis	5	1	3	0	0	2	4	0	15
Listeriosis	0	0	0	0	0	0	0	1	1
Noroviral infection	111	10	28	28	18	10	24	21	250
Paratyphoid	~	~	~	~	~	~	~	~	1
Rotavirus infection ^a	249	182	174	150	119	239	340	237	1690
Salmonellosis	23	6	6	6	7	9	8	9	74
Shigellosis	2	0	0	0	0	0	0	0	2
Staphylococcal food poisoning	0	0	0	0	0	0	0	0	0
Typhoid	~	~	~	~	~	~	~	~	3
Verotoxigenic <i>Escherichia coli</i> infection ^b	15	36	18	1	27	6	33	27	163
Yersiniosis	0	0	0	1	0	0	0	0	1
Zoonotic Disease									
Anthrax	0	0	0	0	0	0	0	0	0
Brucellosis	0	0	0	0	0	0	0	0	0
Echinococcosis	0	0	0	0	0	0	0	0	0
Leptospirosis	0	0	1	0	0	0	0	0	1
Plague	0	0	0	0	0	0	0	0	0
Q Fever	0	0	0	0	0	0	1	0	1
Rabies	0	0	0	0	0	0	0	0	0
Toxoplasmosis	1	0	0	1	0	0	2	0	4
Trichinosis	0	0	0	0	0	0	0	0	0
Vectorborne Disease									
Chikungunya disease ^c	0	0	0	0	0	0	0	0	0
Dengue ^c	0	0	0	0	0	0	0	0	0
Lyme disease (neuroborreliosis) ^c	0	0	0	0	0	0	1	0	1
Malaria	5	3	0	1	0	1	1	0	11
Typhus	0	0	0	0	0	0	0	0	0
West Nile fever ^c	0	0	0	0	0	0	0	0	0

^a Notifiable under the category Acute Infectious Gastroenteritis 2004-2011

^b Notifiable under the category Enterohaemorrhagic *E. coli* 2004-2011

^c Newly added to the list of notifiable diseases in 2012 under Infectious Diseases (Amendment) Regulations 2011 (S.I. No. 452 of 2011)

Human salmonellosis (*S. enterica*) is a notifiable disease. The National Salmonella, Shigella and Listeria Reference Laboratory (NSSLRL) 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 second quarter of 2012. Comparison of trends with previous years is shown in Figure 1.

Table 6. Salmonellosis Notifications by HSE-Area and Month, Q2 2012

Month	E	M	MW	NE	NW	SE	S	W	Total
Apr	3	4	1	1	0	1	0	1	11
May	9	1	2	3	0	6	3	1	25
Jun	11	1	3	2	7	2	5	7	38
Total	23	6	6	6	7	9	8	9	74

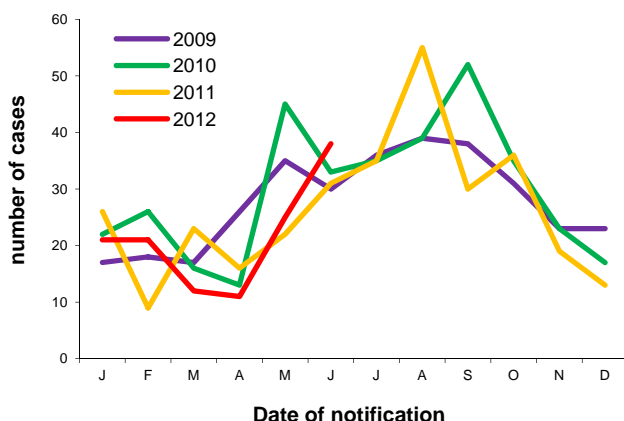


Figure 1. Seasonal Distribution of Human Salmonellosis Notifications, 2009 to end quarter 2 2012

Table 7 shows the serotypes for the *Salmonella* isolates typed by the NSSLRL in the second quarter of 2012 by HSE area (n=77). The commonest human serotypes isolated were *S. Typhimurium** (n= 26, 34%) and *S. Enteritidis* (n= 15, 19%).

Twenty-one (27%) *S. enterica* isolates were reported to NSSLRL as being associated with travel outside of Ireland during this quarter.

Table 8 shows the serotype distribution of confirmed *Salmonella* notifications by travel status this quarter among salmonellosis notifications on CIDR.

Table 7. Serotypes of *S. enterica* Referred to NSSLRL in Quarter 2, 2012 (Data are provided courtesy of Prof. Martin Cormican and staff, NSSLRL).

Serotype	E	M	MW	NE	NW	SE	S	W	Total
4,[5],12:i:-	0	1	1	3	0	1	1	0	7
Bonn	1	0	0	0	0	0	0	0	1
Bovismorbificans	0	0	0	0	0	1	0	0	1
Braenderup	0	1	0	0	0	0	0	0	1
Bredeney	2	0	0	0	0	0	0	0	2
Choleraesuis	1	0	0	0	0	0	0	0	1
Concord	0	0	0	0	0	0	0	1	1
Dublin	0	0	0	0	0	1	0	0	1
Enteritidis	6	1	1	2	1	2	0	2	15
Give	1	0	0	0	0	0	0	0	1
Ill	0	0	0	0	0	1	0	0	1
Infantis	1	0	0	0	0	0	2	0	3
Java	0	0	0	0	1	1	0	0	2
Kentucky	0	0	0	0	0	1	1	0	2
London	0	0	0	0	0	0	0	1	1
Mgulari	0	0	0	0	1	0	0	0	1
Montevideo	1	0	0	0	0	0	0	0	1
Napoli	0	0	0	0	0	1	0	0	1
Newport	0	0	2	0	0	0	0	0	2
Overschie	0	0	0	0	0	0	1	0	1
Paratyphi A	~	~	~	~	~	~	~	~	1
Stanley	2	0	0	0	0	1	0	1	4
Stanleyville	1	0	0	1	0	0	0	0	2
Typhi	~	~	~	~	~	~	~	~	2
Typhimurium	5	4	2	1	0	1	3	3	19
Umbilo	1	0	0	0	0	0	0	1	2
Virchow	1	0	0	0	0	0	0	0	1
Total	24	7	6	7	3	11	10	9	77

Table 8. Confirmed Salmonella notifications by Serotype and Travel Status, Q2 2012 [n(%)]

Serotype	Indigenous	Travel-associated	Unk/not specified	Total
<i>S. Enteritidis</i>	2 (8%)	8 (33%)	5 (23%)	15 (21%)
<i>S. Typhimurium</i>	10 (40%)	4 (17%)	8 (36%)	22 (32%)
Other	10 (40%)	10 (42%)	8 (36%)	28 (39%)
<i>Salmonella</i> spp	3 (12%)	2 (8%)	1 (5%)	6 (8%)
Total	25 (100%)	24 (100%)	22 (100%)	71 (100%)

Note: Data source CIDR. Travel status is inferred from *Country of Infection* variable on CIDR. Note excludes probable notifications

S. Typhi* and *S. Paratyphi

There were three cases of typhoid notified this quarter. Country of infection was reported as Pakistan for two cases and country of infection was unknown for the third case. There was one case of Paratyphi A reported in Q2 2012 associated with travel to SE Asia (Table 5). There were no outbreaks of typhoid or paratyphoid notified this quarter (Table 2).

Outbreaks of Salmonellosis

There were three family outbreaks of salmonellosis reported in Q2 2012, two of which were travel related (Tables 1 & 2).

* –includes 7 cases of monophasic *S. Typhimurium* 4,5,12:i:-

VEROTOXIGENIC *E. COLI* (VTEC)

Verotoxigenic *E. coli* (VTEC) became a notifiable disease on January 1st 2012. Previously, VTEC were notified under the category of Enterohaemorrhagic *E. coli* between 2004 and 2011.

A marked upsurge in VTEC has resulted in 163 cases being notified this quarter¹, the regional distribution of which is shown in Table 5. This compares with 46 VTEC cases notified in Q2 2011 and 54 in Q2 2010 (Figure 2). The increase is due in part to improved testing for non-O157 infections but in part is likely to be a true increase in VTEC incidence.¹

Table 9 shows the number of VTEC cases reported by case classification and HSE-area and Table 10 shows the number of VTEC cases by serogroup and month, Q2 2012.

Table 9. Number VTEC notified by case classification and HSE-area, Q2 2012

Case classification	E	M	MW	NE	NW	SE	S	W	Total
Conf	13	24	10	1	17	6	28	24	123
Prob	2	12	8	0	10	0	5	3	40
Poss	0	0	0	0	0	0	0	0	0
Total	15	36	18	1	27	6	33	27	163

Table 10. Confirmed and Probable VTEC notified by Serogroup and Month, Q2 2012

Month	O157	O26	Other	Total
Jan	6	13 [*]	5	24
Feb	10	36	10	56
Mar	25 [*]	46 [§]	12	83
Total	41	95	27	163

*Includes 1 case reported on the basis of epidemiological link;

§includes 3 case reported on the basis of epidemiological link

Eleven VTEC cases notified during this quarter were reported as having developed HUS. Three were infected with *E. coli* O157 and six with *E. coli* O26, while one each were not laboratory confirmed but were epidemiologically linked to *E. coli* O157 and *E. coli* O26 cases.

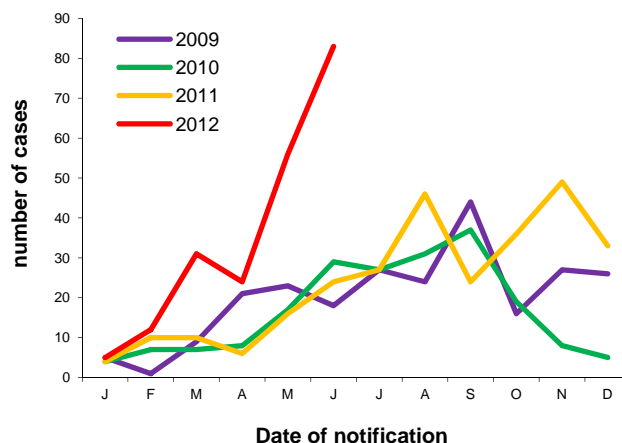


Figure 2. Seasonal distribution of VTEC cases notified 2009 to end quarter 2 2012

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. Table 11 shows the *vt* types of VTEC isolates notified in Q2 2012.

Table 11. Verotoxin typing profiles of *E. coli* isolates referred to the HSE DML Public Health Laboratory, Cherry Orchard Hospital in Q2 2012 (Data are provided courtesy of Dr. Eleanor McNamara and Dr. Anne Carroll).

Serogroup	vt1	vt2	vt1+vt2	Not reported	Total
O157	0	38	2	0	40
O26	32	4	54	1	91
Other	9	10	4	4	27
Total	41	52	60	5	158

*Excludes 5 notifications reported on the basis of epidemiological link as no isolates available

Outbreaks of VTEC infection

During this quarter, eight general and twenty family outbreaks of VTEC infection were reported (see Tables 1 & 2).

1. Garvey et al. 2012. Significant increase in VTEC reported in 2012. Epi-Insight. 13(8) <http://ndsc.newsweaver.ie/epiinsight/utis1jopyq7?a=2&p=26356295&t=17517804>

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 second quarter of 2012 are shown in Table 12. Comparison with previous years is shown in Figure 3. An upsurge since 2011 involves an increase in sporadic *Campylobacter* cases. Despite analysis of the distribution of cases by age, sex and HSE-area, it has not been possible, so far, to determine the cause of this increase.

Table 12. Campylobacter Notifications by HSE-Area and Month, Q2 2012

Month	E	M	MW	NE	NW	SE	S	W	Total
Apr	43	16	20	13	7	19	23	26	167
May	69	25	27	22	12	34	41	33	263
Jun	91	22	24	21	21	36	40	34	289
Total	203	63	71	56	40	89	104	93	719

Outbreaks of Campylobacter infection

There was one family outbreak of campylobacteriosis reported in Q2 2012 (Tables 1 and 2).

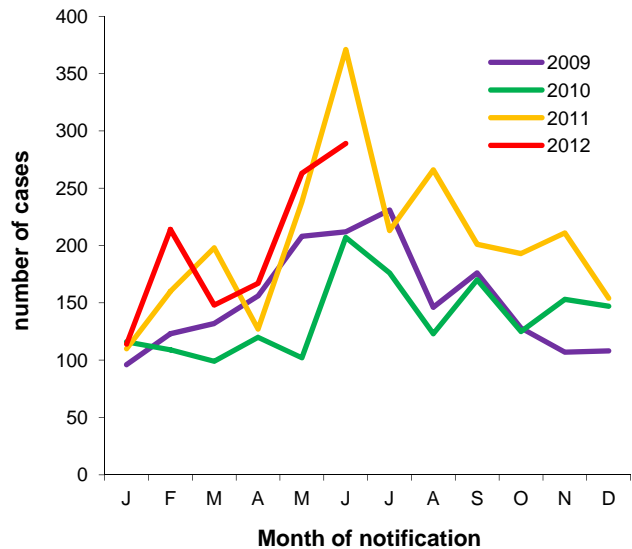


Figure 3. Seasonal distribution of Campylobacter notifications 2009 to end quarter 2 2012

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 Q2 2012, 236 cases of cryptosporidiosis were notified (Table 13), compared to 202 in the same period in 2011 and 152 in Q2 2010 (Figure 4).

Table 13. Cryptosporidiosis Notifications by HSE-Area and Month, Q2 2012

Month	E	M	MW	NE	NW	SE	S	W	Total
Apr	3	16	13	7	15	20	11	14	99
May	7	11	13	8	9	18	12	16	94
Jun	0	1	8	5	3	9	4	13	43
Total	10	28	34	20	27	47	27	43	236

Outbreaks of cryptosporidiosis

There were thirteen family outbreaks of cryptosporidiosis reported in quarter 2 2012 (Tables 1 and 2).

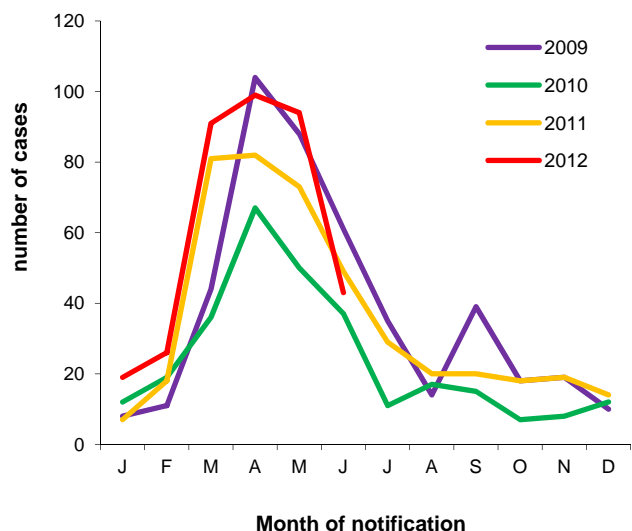


Figure 4. Seasonal distribution of cryptosporidiosis notifications 2009 to end quarter 2 2012

NOROVIRUS

Human noroviral infection became a notifiable disease on January 1st 2004. There were 250 cases notified in the second quarter of 2012 (Table 14). These data are certainly an under-ascertainment of the true burden of disease due to this pathogen.

Table 14. Norovirus Notifications by HSE-Area and Month, Q2 2012

Month	E	M	MW	NE	NW	SE	S	W	Total
Apr	33	5	18	7	8	2	9	3	85
May	45	2	8	17	9	5	9	13	108
Jun	33	3	2	4	1	3	6	5	57
Total	111	10	28	28	18	10	24	21	250

Norovirus outbreaks

Norovirus or suspect viral aetiology is the commonest cause of outbreaks of acute gastroenteritis in Ireland. In the second quarter of 2012 there were nineteen outbreaks confirmed as being caused by this virus, involving at least 275

people becoming ill, as outlined in Tables 1 & 2. The seasonal trend is outlined in Figure 5.

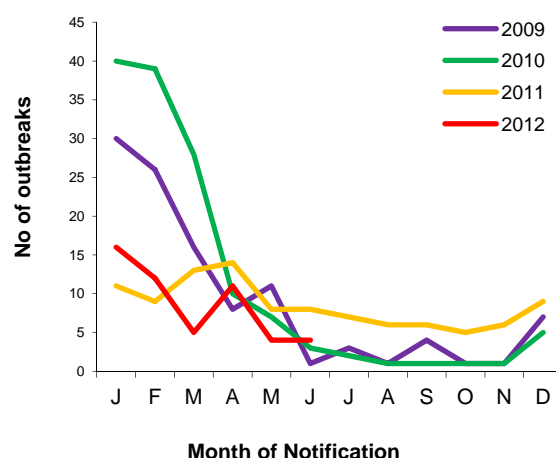


Figure 5. Seasonal Distribution of Confirmed Norovirus Outbreaks, 2009 to end quarter 2 2012

SHIGELLA

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

During Q2 2012, two cases of shigellosis were notified (Table 5). This compares with eight cases notified in Q2 2011 and fourteen in Q2 2010. The distribution by serotype is shown in Table 15.

One case acquired their illness in Ireland while country of infection was reported as not specified for the remaining case.

There were no outbreaks of shigellosis reported in Q2 2012 (Table 2).

Table 15: Species and serotype distribution of Q2 2012 human *Shigella* isolates (Shigella typing services are provided courtesy of Prof. Martin Cormican and staff at the National Salmonella Shigella and Listeria Reference Laboratory).

Serotype	Number of isolates
<i>Shigella sonnei</i>	2
Total	2

Outbreaks of shigellosis

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 2 2012, fifteen cases of giardiasis were notified (Table 5); this compares with 12 cases notified in Q2 2011 and 12 in Q2 2010.

Three cases (20%) were reported to have acquired their illness abroad. Country of infection was reported as Ireland for two cases and 'not specified' or 'unknown' for the remaining ten cases.

Outbreaks of giardiasis

There were no outbreaks of giardiasis notified in Q2 2012 (Table 2).

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 was one adult case of listeriosis notified in Q2 2012, compared to two in quarter 2 2011 and two in quarter 2 2010. The associated isolate was referred for typing to NSSLRL (Table 16).

Table 16: Serotypes of Q2 2012 human *Listeria* isolates referred to the NSSLRL

(Typing services are provided by Prof. Martin Cormican and staff at the National Salmonella Shigella and Listeria Reference Laboratory).

Serotype	Number of isolates
4b	1

ROTAVIRUS INFECTION

Since 2004, rotavirus, although not specifically listed, was a notifiable disease in Ireland under the Acute Infectious Gastroenteritis (AIG) disease category. Prior to 2004, rotavirus cases were notified in the former notification category of "Gastroenteritis in children under two years". In April 2008 the case definition of AIG was amended specifying rotavirus. Rotavirus became notifiable as a disease in its own right under the Infectious Diseases (Amendment) Regulations 2011 (S.I. No. 452 of 2011). Rotavirus notifications for the second quarter of 2012 are shown in Table 17.

Table 17. Rotavirus Infection by HSE-Area and Month, Q2 2012

Month	E	M	MW	NE	NW	SE	S	W	Total
Apr	82	47	77	41	27	92	116	77	559
May	113	83	76	76	55	105	170	110	788
Jun	54	52	21	33	37	42	54	50	343
Total	249	182	174	150	119	239	340	237	1690

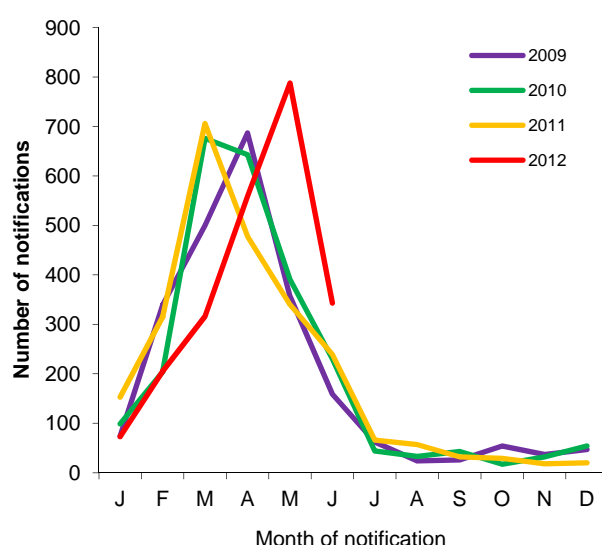


Figure 6. Seasonal Distribution of Rotavirus Notifications, 2009 to end quarter 2 2012

Outbreaks of Rotavirus

There were five family outbreaks of rotavirus notified this quarter (Tables 1 & 2).

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 intoxication notified this quarter.

Outbreaks of foodborne intoxications

There were no outbreaks of foodborne infection/intoxication notified this quarter (Tables 1 & 2).

NON-IID ZONOTIC DISEASES

Non-IID zoonoses now notifiable include: anthrax, brucellosis, echinococcosis, leptospirosis, plague, Q fever, toxoplasmosis, trichinosis and rabies. The Q2 2012 notifications of these zoonotic diseases are reported by HSE-Area in Table 5.

Four cases of toxoplasmosis were notified in this quarter. This compares with seven cases notified in the same period in 2011 and 8 cases in Q2 2010.

There was one case of leptospirosis notified in Q2 2012; this compares with two in Q2 2011 and one in Q2 2010. The case reported in Q2 2012 reported occupational exposure.

There was one case of Q fever notified in Q2 2012; this compares with none in Q2 2011 and one in Q2 2010.

There were no cases of echinococcosis or trichinosis notified this quarter.

MALARIA

Malaria is a notifiable disease for many years. The Q2 2012 notifications are reported in Table 5 by HSE-Area.

Eleven cases of malaria were notified in Q2 2012. This compares with seven cases reported in Q2 2011 and 19 in Q2 2010.

Eight cases were reported as *P. falciparum*, two as *P. ovale* and one as *P. vivax*.

Eight cases were exposed in Sub-Saharan Africa and the country of infection is unknown for the remaining three cases.

The reason for travel for seven cases was reported as 'visiting family in country of origin', while another case reported business travel. The reason for travel was not specified/unknown for the remaining three cases.

OTHER NOTIFIABLE VECTORBORNE DISEASES

Under Infectious Diseases (Amendment) Regulations 2011 (S.I. No. 452 of 2011) (Sept 2011), Chikungunya disease, Dengue, Lyme disease (neuroborreliosis) and West Nile fever were made notifiable. The Q2 2012 notifications are reported in Table 5 by HSE-Area.

There was one case of Lyme disease (neuroborreliosis) reported this quarter in HSE S.

There were no notifications of Chikungunya disease, Dengue or West Nile fever this quarter.

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