

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



Feidhmeannacht na Seirbhíse Sláinte
Health Service Executive



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

Quarter 2 –2013

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This is the second quarterly report for 2013 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, 2013

Month	HSE area	Location	No. ill *	No. Hosp.	Date Onset	Suspect mode of transmission	Disease
Apr	W	Residential institution	28	0	26/03/2013	P-P	Suspected Norovirus
Apr	NW	Hospital	3	3	23/03/2013	Other	Clostridium difficile
Apr	S	Comm. Hosp/Long-stay unit	11	0	01/04/2013	P-P & AB	AIG
Apr	SE	Community outbreak	11	2	18/03/2013	P-P	VTEC
Apr	E	Other	4	-	05/04/2013	Unknown	AIG
Apr	M	Comm. Hosp/Long-stay unit	-	-	-	P-P & AB	Noroviral infection
Apr	E	Residential institution	12	-	05/04/2013	P-P	Noroviral infection
Apr	E	Comm. Hosp/Long-stay unit	12	-	-	Unknown	Noroviral infection
Apr	E	Creche	6	0	27/03/2013	Unknown	VTEC
Apr	M	Comm. Hosp/Long-stay unit	-	-	-	P-P	Noroviral infection
Apr	NE	Residential institution	12	0	-	P-P & AB	Noroviral infection
Apr	E	Comm. Hosp/Long-stay unit	26	19	08/04/2013	P-P	Noroviral infection
Apr	W	Residential institution	38	-	-	P-P	Noroviral infection
Apr	NE	Hospital	13	-	-	P-P & AB	Noroviral infection
Apr	SE	Hospital	10	1	13/04/2013	P-P	Noroviral infection
Apr	SE	Hospital	3	-	10/03/2013	P-P	Suspected Norovirus
Apr	SE	Residential institution	27	-	09/04/2013	P-P	Noroviral infection
Apr	E	Comm. Hosp/Long-stay unit	4	-	21/04/2013	P-P	AIG
Apr	NW	Comm. Hosp/Long-stay unit	6	-	12/04/2013	P-P	AIG
Apr	NW	Comm. Hosp/Long-stay unit	11	-	19/04/2013	P-P	AIG
Apr	W	Residential institution	5	0	14/04/2013	P-P	Suspected Norovirus
Apr	W	Hospital	11	-	-	P-P	Noroviral infection
Apr	S	School	28	0	16/04/2013	P-P & AB	AIG
Apr	E	Comm. Hosp/Long-stay unit	20	-	02/04/2013	P-P	AIG
Apr	E	Comm. Hosp/Long-stay unit	13	1	09/04/2013	P-P	AIG
Apr	E	Hospital	195	141	20/04/2013	P-P	Noroviral infection
Apr	W	Hospital	6	6	-	P-P	Clostridium difficile
Apr	W	Community outbreak	13	2	01/04/2013	WB	Cryptosporidiosis
Apr	W	Residential institution	2	-	-	P-P	Noroviral infection
Apr	W	Hospital	8	-	28/04/2013	P-P	AIG
May	S	Hotel	19	-	12/05/2013	P-P & FB	AIG
May	M	Hospital	5	0	-	P-P & AB	Suspected norovirus
May	M	Comm. Hosp/Long-stay unit	8	0	-	P-P & AB	Noroviral infection
May	SE	Residential institution	12	-	26/04/2013	P-P	Suspected Norovirus
May	S	Comm. Hosp/Long-stay unit	13	0	-	P-P & AB	Noroviral infection
May	S	Comm. Hosp/Long-stay unit	3	0	02/01/2013	P-P & AB	AIG
May	E	Restaurant / Cafe	70	-	26/04/2013	P-P & FB	Noroviral infection
May	W	Other	2	0	06/04/2013	P-P	VTEC
May	E	School	7	0	08/05/2013	Unknown	Noroviral infection
May	E	Comm. Hosp/Long-stay unit	15	-	08/05/2013	P-P	Noroviral infection
May	NW	Comm. Hosp/Long-stay unit	6	-	05/05/2013	P-P	AIG
May	S	Hotel	7	0	03/05/2013	Not Specified	Suspected Norovirus
May	E	Residential institution	16	-	-	Not Specified	Noroviral infection
May	MW	Residential institution	19	0	03/05/2013	AB	Noroviral infection

Month	HSE area	Location	No. ill *	No. Hosp.	Date Onset	Suspect mode of transmission	Disease
May	S	Other	3	0	26/03/2013	WB	Cryptosporidiosis
May	E	Residential institution	46	-	14/05/2013	Not Specified	Noroviral infection
May	NE	Residential institution	7	0	14/05/2013	P-P & AB	Suspected Norovirus
May	S	Residential institution	15	0	-	P-P	Noroviral infection
May	W	Residential institution	4	0	15/06/2013	P-P	Suspected Norovirus
May	MW	Residential institution	9	-	14/05/2013	AB	Noroviral infection
May	S	Comm. Hosp/Long-stay unit	5	0	13/05/2013	P-P & AB	AIG
May	W	Hospital	16	-	-	P-P	Noroviral infection
May	M	Hospital	7	1	-	P-P & AB	Noroviral infection
May	W	Hospital	8	6	21/05/2013	P-P	Noroviral infection
May	S	Comm. Hosp/Long-stay unit	3	0	30/05/2013	Not Specified	AIG
May	W	Community outbreak	3	1	25/04/2013	WB	Cryptosporidiosis
Jun	W	Residential institution	3	1	-	P-P	Noroviral infection
Jun	S	Comm. Hosp/Long-stay unit	5	0	18/06/2013	P-P	Noroviral infection
Jun	E	Residential institution	27	-	17/06/2013	Unknown	Noroviral infection
Jun	NE	Residential institution	9	0	09/06/2013	AB	AIG
Jun	W	Comm. Hosp/Long-stay unit	11	6	-	P-P	AIG
Jun	S	Hospital	-	-	-	Not Specified	Clostridium difficile
Jun	S	Other	1	0	09/05/2013	Not Specified	VTEC
Jun	S	Residential institution	9	1	10/06/2013	P-P	AIG

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, 2013

Month	HSE area	Location	No. ill *	No. Hosp.	Date Onset	Suspect mode of transmission	Disease
Apr	MW	Private house	1	0	20/02/2013	Unknown	VTEC
Apr	SE	Private house	1	1	27/03/2013	Unknown	VTEC
Apr	NW	Unknown	8	-	07/04/2013	Not Specified	Noroviral infection
Apr	SE	Private house	3	1	02/04/2013	P-P & Animal	VTEC
Apr	SE	Private house	2	1	31/03/2013	Unknown	VTEC
Apr	NW	Private house	2	1	08/04/2013	Animal contact	Cryptosporidiosis
Apr	M	Private house	1	0	19/04/2013	Unknown	VTEC
Apr	M	Private house	2	0	17/04/2013	Unknown	VTEC
Apr	W	Private house	3	0	-	P-P	Noroviral infection
Apr	M	Private house	1	0	17/04/2013	Unknown	VTEC
May	NW	Private house	2	0	18/04/2013	Not Specified	Cryptosporidiosis
May	NW	Private house	5	0	-	Not Specified	Cryptosporidiosis
May	NW	Private house	2	2	-	P-P	Rotavirus
May	NW	Private house	3	0	-	Unknown	Campylobacter
May	M	Private house	2	0	05/05/2013	WB	VTEC
May	NE	Extended family	4	1	29/04/2013	Unknown	Salmonellosis
May	SE	Private house	8	1	06/05/2013	P-P & Animal	Cryptosporidiosis
May	W	Private house	2	0	13/04/2013	Unknown	Cryptosporidiosis
May	S	Extended family	7	1	05/05/2013	P-P	AIG
May	MW	Private house	1	1	23/04/2013	P-P	VTEC

May	SE	Private house	1	0	04/05/2013	Unknown	VTEC
May	W	Private house	2	0	07/04/2013	Unknown	VTEC
May	SE	Private house	2	0	01/05/2013	Unknown	VTEC
May	MW	Private house	1	-	02/05/2013	Animal contact	VTEC
May	MW	Private house	3	0	29/04/2013	P-P	VTEC
May	W	Private house	1	0	10/05/2013	Unknown	VTEC
May	NW	Private house	1	1	02/05/2013	Not Specified	VTEC
May	W	Private house	2	0	16/05/2013	Other	Campylobacter
Jun	W	Private house	3	0	23/05/2013	Animal contact	Cryptosporidiosis
Jun	NW	Private house	2	0	18/05/2013	Unknown	Cryptosporidiosis
Jun	S	Private house	5	0	23/08/2012	WB	VTEC
Jun	SE	Private house	-	-	23/03/2013	P-P & Animal	VTEC
Jun	W	Private house	2	1	12/05/2013	P-P	VTEC
Jun	W	Private house	2	2	30/05/2013	Unknown	VTEC
Jun	E	Private house	2	1	20/04/2013	Environmental / Fomite	VTEC
Jun	NW	Private house	2	2	27/05/2013	Unknown	Cryptosporidiosis
Jun	W	Private house	2	0	21/05/2013	Unknown	Cryptosporidiosis
Jun	SE	Private house	2	1	09/06/2013	Unknown	VTEC
Jun	NW	Private house	2	1	04/06/2013	Unknown	Cryptosporidiosis
Jun	NW	Private house	1	1	14/05/2013	Not Specified	VTEC
Jun	MW	Private house	1	-	07/05/2013	P-P	VTEC
Jun	W	Private house	1	0	11/06/2013	P-P	VTEC
Jun	S	Private house	2	0	10/04/2013	Other	VTEC
Jun	W	Private house	2	0	-	Unknown	Campylobacter

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, 2013

Month	HSE area	Type of outbreak	Location	No. ill *	No. Hosp.	Date Onset	Suspect mode of transmission	Organism
Apr	S	General	Comm. Hosp/Long-stay unit	15	1	23/03/2013	AB	Influenza
Apr	E	General	Residential institution	22	-	-	P-P & AB	Influenza
Apr	NE	General	Residential institution	4	3	-	P-P	Influenza
Apr	MW	General	Comm. Hosp/Long-stay unit	24	-	-	P-P & AB	Influenza
Apr	NE	General	Residential institution	6	1	-	P-P & AB	Influenza
Apr	E	General	Residential institution	13	-	03/04/2013	P-P & AB	Influenza
Apr	SE	General	Residential institution	15	1	11/03/2013	P-P & AB	Human Metapneumovirus + Parainfluenza
Apr	S	General	Comm. Hosp/Long-stay unit	8	0	02/02/2013	AB	Influenza
Apr	E	General	Residential institution	4	1	14/03/2013	P-P	Influenza
Apr	M	General	Comm. Hosp/Long-stay unit	14	1	-	P-P & AB	Influenza
Apr	M	General	Comm. Hosp/Long-stay unit	34	4	-	P-P	Influenza
Apr	NE	General	Residential institution	15	2	12/03/2013	P-P & AB	Human Metapneumovirus
Apr	S	General	Comm. Hosp/Long-stay unit	27	5	28/03/2013	AB	Influenza

Month	HSE area	Type of outbreak	Location	No. ill *	No. Hosp.	Date Onset	Suspect mode of transmission	Organism
Apr	S	General	Comm. Hosp/Long-stay unit	40	0	30/03/2013	AB	Influenza
Apr	M	General	Comm. Hosp/Long-stay unit	8	0	-	P-P & AB	Influenza
Apr	E	General	Residential institution	19	1	08/04/2013	P-P & AB	Influenza
Apr	E	General	Residential institution	32	1	-	P-P, FB & Airborne	Influenza
Apr	E	General	Residential institution	24	-	05/04/2013	P-P & AB	Influenza
Apr	SE	General	Residential institution	36	2	-	AB	Influenza
Apr	W	Family	Private house	2	1	11/03/2013	P-P	Pertussis
Apr	MW	General	Comm. Hosp/Long-stay unit	7	7	05/04/2013	P-P	Influenza
Apr	MW	General	Comm. Hosp/Long-stay unit	8	8	-	P-P	Influenza
Apr	E	General	Comm. Hosp/Long-stay unit	37	3	-	P-P	Influenza
Apr	M	General	Comm. Hosp/Long-stay unit	4	-	-	FB & AB	Parainfluenza
Apr	M	General	Comm. Hosp/Long-stay unit	24	2	-	P-P	Influenza
Apr	SE	General	Residential institution	16	1	-	AB	Influenza
Apr	E	General	University/College	3	0	-	P-P & AB	Tuberculosis
Apr	MW	General	Residential institution	-	-	-	AB	Influenza
Apr	NW	General	Comm. Hosp/Long-stay unit	9	-	-	Not Specified	Influenza
Apr	NE	General	Community outbreak	10	4	03/03/2013	P-P	Hepatitis A
Apr	S	General	Comm. Hosp/Long-stay unit	5	-	17/04/2013	AB	Acute respiratory illness
Apr	SE	General	Comm. Hosp/Long-stay unit	22	0	02/04/2013	AB	Parainfluenza
Apr	SE	General	Comm. Hosp/Long-stay unit	13	0	-	AB	Influenza
Apr	W	General	Hospital	2	2	-	Unknown	Pseudomonas
Apr	W	General	Comm. Hosp/Long-stay unit	29	1	-	P-P	Influenza
May	E	General	Comm. Hosp/Long-stay unit	17	1	-	P-P	Influenza
May	E	Family	Private house	2	0	22/04/2013	Unknown	Measles
May	E	Family	Extended family	2	2	08/03/2010	P-P & AB	Meningococcal disease
May	NW	General	Hospital	3	-	30/04/2013	P-P	Group A Streptococcus
May	NW	General	Comm. Hosp/Long-stay unit	6	0	05/05/2013	P-P & AB	Query Influenza
May	E	General	Residential institution	40	3	04/05/2013	P-P	Human Metapneumovirus
May	S	Family	Private house	2	2	20/04/2013	P-P	Group A Streptococcus
May	E	General	Extended family	9	0	06/05/2013	P-P	Measles
May	NW	General	Comm. Hosp/Long-stay unit	10	-	-	P-P	Human Metapneumovirus
May	SE	Family	Private house	2	0	01/04/2013	P-P & AB	Pertussis
May	E	Family	Private house	3	0	20/04/2013	Unknown	Parvovirus
May	E	General	School	3	0	22/04/2013	P-P	Parvovirus
May	E	General	School	11	0	09/04/2013	P-P	Parvovirus
May	E	Family	Private house	2	-	13/05/2013	P-P	Pertussis
May	NW	Family	Private house	3	1	09/03/2013	Not Specified	Hepatitis A

Month	HSE area	Type of outbreak	Location	No. ill *	No. Hosp.	Date Onset	Suspect mode of transmission	Organism
May	E	General	Residential institution	-	-	25/05/2013	P-P	Influenza
May	E	Family	Private house	3	0	20/04/2013	P-P & AB	Pertussis
May	E	General	Comm. Hosp/Long-stay unit	12	-	21/05/2013	P-P	Parainfluenza
Jun	NW	General	Residential institution	10	2	22/05/2013	P-P	Parainfluenza
Jun	E	Family	Private house	2	2	01/04/2013	P-P	Hepatitis A
Jun	E	General	Creche	3	-	-	P-P	Hand foot and mouth disease
Jun	E	Family	Private house	2	1	01/06/2013	Unknown	Pertussis
Jun	HPSC	General	Community outbreak	21	6	05/04/2013	Unknown	Hepatitis A
Jun	E	Family	Travel related	2	0	05/06/2013	P-P & AB	Measles
Jun	MW	Family	Private house	-	-	01/05/2013	P-P	Tuberculosis
Jun	MW	Family	Private house	2	1	18/01/2013	P-P	Tuberculosis

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 2013. There were 64 general and 44 family IID outbreaks reported during this period, resulting in at least 1,035 people being ill.

Norovirus (n=29) was responsible for the most general outbreaks of IID (46% of all general outbreaks), followed by Acute Infectious Gastroenteritis/Suspected Norovirus (n=24).

The most common causes of family outbreaks of IID were VTEC (n=26) [58%]. The other diseases responsible for family outbreaks were AIG,

campylobacteriosis, cryptosporidiosis, Norovirus, Rotavirus and salmonellosis. (Table 2).

Forty-four general IID outbreaks were transmitted person-to-person/person-to-person and airborne (70%). Fifty-one general outbreaks (81%) were reported to have occurred in healthcare settings, i.e. hospitals or residential institutions, during this period.

There were sixty-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 2013.

Table 4. Number of Infectious Disease Outbreaks by HSE Area, Q2 2013

HSE Area	No. of outbreaks	Rate per 100,000 population
E	40	2.5
M	14	5.0
MW	13	3.4
NE	9	2.0
NW	21	8.1
SE	19	4.0
S	23	3.5
W	29	6.5
Total	168	4.0

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 2013 is shown in Table 5.

Table 5. Intestinal Infectious, Zoonotic and Vectorborne Disease Notifications Quarter 2, 2013 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	~	~	~	~	~	~	~	~	1
<i>Campylobacter</i> infection	187	42	65	38	36	107	141	72	688
Cholera	0	0	0	0	0	0	0	0	0
<i>Clostridium perfringens</i> (type A) food-borne disease	0	0	0	1	0	0	0	0	1
Cryptosporidiosis	10	21	35	18	32	37	41	57	251
Giardiasis	2	1	0	0	0	0	2	1	6
Listeriosis	1	0	0	0	0	0	0	0	1
Noroviral infection	246	15	32	53	5	9	25	78	463
Paratyphoid	~	~	~	~	~	~	~	~	0
Rotavirus infection ^a	351	237	132	142	132	314	307	240	1855
Salmonellosis	23	8	8	10	3	6	9	6	73
Shigellosis	1	0	2	0	0	0	3	1	7
Staphylococcal food poisoning	0	0	0	0	0	0	0	0	0
Typhoid	~	~	~	~	~	~	~	~	4
Verotoxigenic <i>Escherichia coli</i> infection ^b	24	15	55	1	10	47	24	37	213
Yersiniosis	0	0	0	0	1	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	1	0	0	0	0	0	0	0	1
Plague	0	0	0	0	0	0	0	0	0
Q Fever	0	0	0	0	0	0	0	0	0
Rabies	0	0	0	0	0	0	0	0	0
Toxoplasmosis	2	4	0	0	0	1	1	0	8
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	1	0	0	0	0	0	0	1	2
Lyme disease (neuroborreliosis) ^c	0	0	0	0	0	0	0	0	0
Malaria	4	0	0	1	1	0	2	1	9
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 2013. Comparison of trends with previous years is shown in Figure 1.

Table 6. Salmonellosis Notifications by HSE-Area and Month, Q2 2013

Month	E	M	MW	NE	NW	SE	S	W	Total
Apr	7	2	2	1	1	2	2	2	19
May	11	3	6	5	1	3	5	1	35
Jun	5	3	0	4	1	1	2	3	19
Total	23	8	8	10	3	6	9	6	73

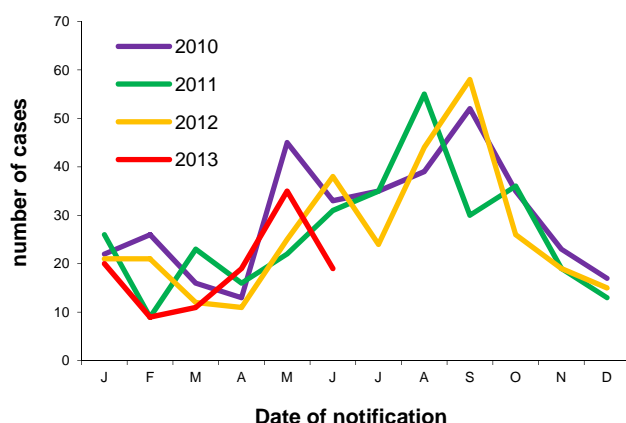


Figure 1. Seasonal Distribution of Human Salmonellosis Notifications, 2010 to end quarter 2 2013

Table 7 shows the serotypes for the *Salmonella* isolates typed by the NSSLRL in the second quarter of 2013 by HSE area (n=77). The commonest human serotypes isolated were *S. Typhimurium** (n= 33, 43%) and *S. Enteritidis* (n= 9, 12%).

Twenty-two (29%) *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, 2013 (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:-	2	1	3	2	0	1	0	1	10
Agama	0	0	0	1	0	0	0	0	1
Agona	0	0	0	0	0	0	1	0	1
Anatum	0	0	0	0	0	0	0	1	1
Bareilly	1	0	0	0	0	1	0	0	2
Braenderup	1	1	0	0	0	0	0	0	2
Butantan	1	0	0	0	0	0	0	0	1
Canada	1	0	0	0	0	0	0	0	1
Dublin	0	0	0	0	1	0	1	0	2
Enteritidis	4	3	0	1	1	0	0	0	9
Hadar	1	0	0	0	0	0	0	0	1
Heidelberg	0	1	0	0	0	0	0	0	1
Illa 18:z4,z23	0	0	0	0	0	1	0	0	1
Indiana	1	0	0	0	0	0	1	0	2
Kentucky	0	0	0	0	0	0	0	1	1
Litchfield	0	0	0	0	0	0	0	1	1
Muenchen	0	1	0	0	0	0	0	1	2
Newport	1	2	0	0	0	0	1	0	4
Stanley	0	0	1	0	0	1	0	0	2
Telekebir	0	0	1	0	0	0	0	0	1
Typhi	~	~	~	~	~	~	~	~	4
Typhimurium	5	0	9	4	1	1	2	1	23
Unnamed	1	0	0	0	0	0	1	0	2
Virchow	1	1	0	0	0	0	0	0	2
Total	23	10	14	8	3	5	7	7	77

Table 8. Confirmed Salmonella notifications by Serotype and Travel Status, Q2 2013 [n(%)]

Serotype	Indigenous	Travel-associated	Unk/not specified	Total
<i>S. Enteritidis</i>	2 (7%)	4 (17%)	3 (15%)	9 (12%)
<i>S. Typhimurium</i>	17 (59%)	5 (21%)	9 (45%)	31 (42%)
Other	10 (34%)	14 (58%)	7 (35%)	31 (42%)
<i>Salmonella</i> spp	0 (0%)	1 (4%)	1 (5%)	2 (4%)
Total	29 (100%)	24 (100%)	20 (100%)	73 (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 no cases of Paratyphoid reported in Q2 2013. There were four cases of typhoid notified this quarter, two associated with travel to Pakistan and two associated with travel to India (Table 5).

Outbreaks of Salmonellosis

There was one family outbreak of salmonellosis notified in Q2 2013 (Tables 1 & 2).

* –includes 10 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.

Two-hundred and thirteen cases of VTEC were notified this quarter, the regional distribution of which is shown in Table 9. This compares with 162 VTEC cases notified in Q2 2012 and 45 in Q2 2011 (Figure 2).

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 2013.

Table 9. Number VTEC notified by case classification and HSE-area, Q2 2013

Case classification	E	M	MW	NE	NW	SE	S	W	Total
Conf	11	9	42	1	8	42	22	33	168
Prob	13	6	13	0	2	5	2	4	45
Poss	0	0	0	0	0	0	0	0	0
Total	24	15	55	1	10	47	24	37	213

Table 10. VTEC notified by Serogroup and Month, Q2 2013

Month	O157	O26	Other	None*	Total
Apr	2	19	34	0	55
May	16	40	39	0	95
Jun	17	21	24	1	63
Total	35	80	97	1	213

Four VTEC cases notified during this quarter were reported as having developed HUS. Three were infected with *E. coli* O157 and one with *E. coli* O26.

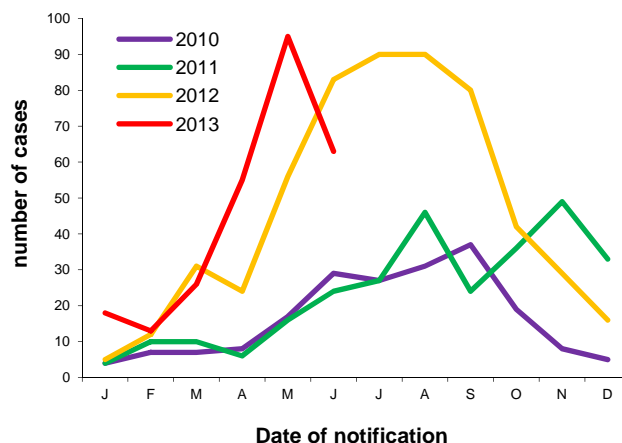


Figure 2. Seasonal distribution of VTEC cases notified 2010 to end quarter 2 2013

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 cases notified in Q2 2013.

Table 11. Verotoxin typing profiles of *E. coli* referred to the HSE DML Public Health Laboratory, Cherry Orchard Hospital in Q2 2013 (Data are provided courtesy of Dr. Eleanor McNamara and Dr. Anne Carroll).

Serogroup	vt1	vt2	vt1+vt2	Total
O157	0	27	8	35
O26	45	2	33	80
Other	58	23	16	97
Total	103	52	57	212

*Excludes one notification reported as probable on the basis of epidemiological link, as no strain available

Outbreaks of VTEC infection

During this quarter, there were four general outbreaks and twenty-six family outbreaks of VTEC infection 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 second quarter of 2013 are shown in Table 12. There were 688 notifications this quarter, lower than the number notified in the same period in 2012 (n=717) and 2011 (n=733) (figure 3).

Table 12. *Campylobacter* notifications by HSE-Area and month, Q2 2013

Month	E	M	MW	NE	NW	SE	S	W	Total
Apr	38	6	12	8	6	27	29	9	135
May	78	16	23	12	21	40	56	33	279
Jun	71	20	30	18	9	40	56	30	274
Total	187	42	65	38	36	107	141	72	688

Outbreaks of *Campylobacter* infection

There were three family outbreaks of campylobacteriosis reported in Q2 2013 (Tables 1 and 2).

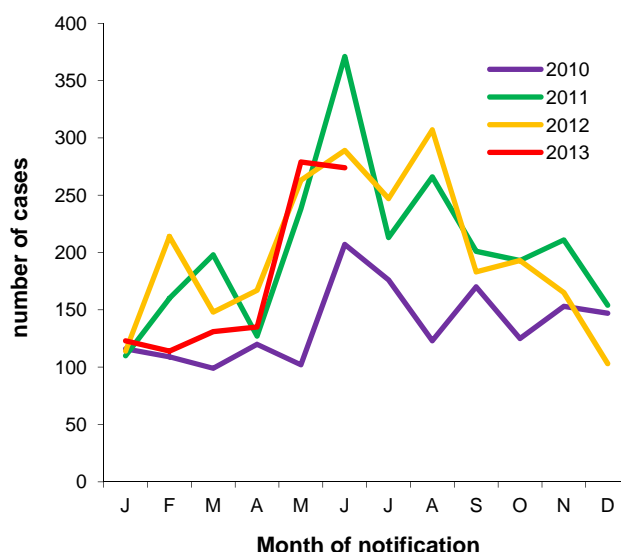


Figure 3. Seasonal distribution of *Campylobacter* notifications 2010 to end quarter 2 2013

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 2013, 251 cases of cryptosporidiosis were notified (Table 13), compared to 236 in the same period in 2012 and 202 in Q2 2011 (Figure 4).

Table 13. Cryptosporidiosis Notifications by HSE-Area and Month, Q2 2013

Month	E	M	MW	NE	NW	SE	S	W	Total
Apr	3	5	13	7	6	22	20	18	94
May	7	11	12	9	11	13	16	26	105
Jun	0	5	10	2	15	2	5	13	52
Total	10	21	35	18	32	37	41	57	251

Outbreaks of cryptosporidiosis

There were three general and ten family outbreaks of cryptosporidiosis reported in quarter 2 2013 (Tables 1 and 2).

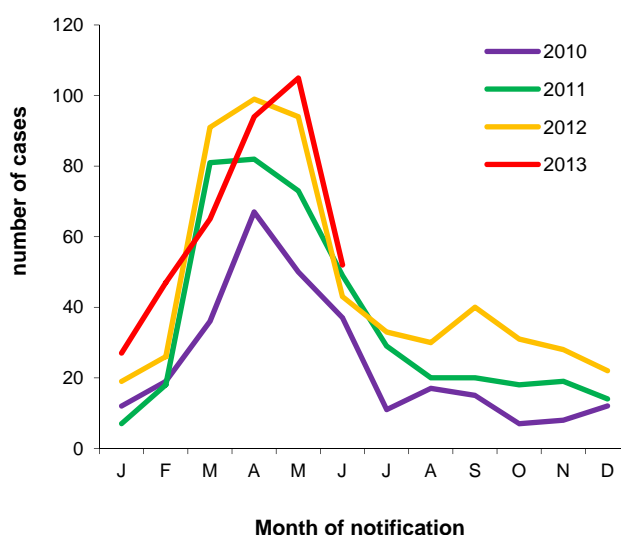


Figure 4. Seasonal distribution of cryptosporidiosis notifications 2010 to end quarter 2 2013

NOROVIRUS

Human noroviral infection became a notifiable disease on January 1st 2004. There were 463 cases notified in the second quarter of 2013 (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 2013

Month	E	M	MW	NE	NW	SE	S	W	Total
Apr	109	9	7	31	5	7	2	37	207
May	92	4	20	10	0	2	20	31	179
Jun	45	2	5	12	0	0	3	10	77
Total	246	15	32	53	5	9	25	78	463

Norovirus outbreaks

Norovirus or suspect viral aetiology is the commonest cause of outbreaks of acute gastroenteritis in Ireland. In the second quarter of 2013 there were thirty one outbreaks confirmed as being caused by this virus, involving at least 653

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

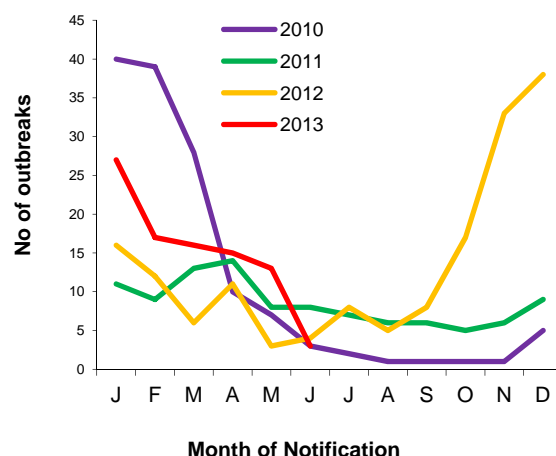


Figure 5. Seasonal distribution of confirmed norovirus outbreaks, 2010 to end quarter 2 2013

SHIGELLA

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

During Q2 2013, seven cases of shigellosis were notified (Table 5). This compares with two cases notified in Q2 2012 and eight in Q2 2011. The distribution by serotype is shown in Table 15.

Three cases were travel related, Ireland was reported as country of infection for one case and country of infection was reported as not specified for the remaining three cases.

Outbreaks of shigellosis

There were no outbreaks of shigellosis reported in Q2 2013 (Table 2).

Table 15: Species and serotype distribution of Q2 2013 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>	4
<i>Shigella flexneri</i>	1
<i>Shigella boydii</i>	2
Total	7

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 2013, six cases of giardiasis were notified (Table 5); this compares with 15 cases notified in Q2 2012 and 12 in Q2 2011.

Two cases (33%) 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 two cases.

Outbreaks of giardiasis

There were no outbreaks of giardiasis notified in Q2 2013 (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 neonatal case of listeriosis notified in Q2 2013, compared to one in quarter 2 2012 and two in quarter 2 2011. One isolate was referred for typing to NSSLRL (Table 16).

Table 16: Serotypes of Q2 2013 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 2013 are shown in Table 17.

Table 17. Rotavirus infection by HSE-Area and month, Q2 2013

Month	E	M	MW	NE	NW	SE	S	W	Total
Apr	182	105	55	65	58	131	90	102	788
May	127	101	56	57	63	107	128	102	741
Jun	42	31	21	20	11	76	89	36	326
Total	351	237	132	142	132	314	307	240	1855

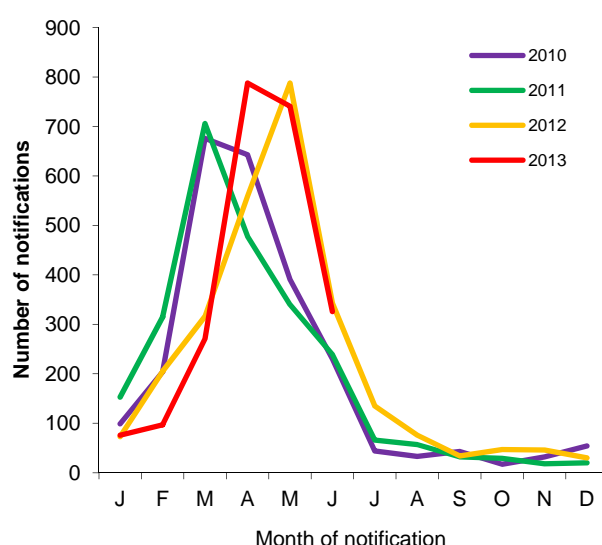


Figure 6. Seasonal distribution of rotavirus notifications, 2010 to end quarter 2 2013

Outbreaks of rotavirus

There was one family outbreak 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 was one case of infant botulism and one case of *Clostridium perfringens* (type A) notified this quarter.

NON-IID ZONOTIC DISEASES

Non-IID zoonoses now notifiable include: anthrax, brucellosis, echinococcosis, leptospirosis, plague, Q fever, toxoplasmosis, trichinosis and rabies. The Q2 2013 notifications of these zoonotic diseases are reported by HSE-Area in Table 5.

Eight cases of toxoplasmosis were notified in this quarter. This compares with four cases notified in the same period in 2012 and seven cases in Q2 2011.

There was one case of leptospirosis notified in Q2 2013; this compares with one in Q2 2012 and two in Q2 2011. It is thought that the case reported this quarter acquire their illness occupationally.

There were no cases of Q fever notified in Q2 2013; this compares with one case in Q2 2012 and none in Q2 2011.

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

MALARIA

Malaria is a notifiable disease for many years. The Q2 2013 notifications are reported in Table 5 by HSE-Area.

Nine cases of malaria were notified in Q2 2013. This compares with eleven cases reported in Q2 2012 and seven in Q2 2011.

Eight cases were reported as *P. falciparum* and the organism was not specified for the remaining case.

Seven cases were exposed in Africa and the country of infection is unknown/not specified for the remaining two cases.

The reason for travel for four cases was reported as 'visiting family in country of origin'. One case was reported in a new entrant to Ireland, one case cited business travel and one case occurred in a missionary/volunteer worker. The reason for travel was not specified/unknown for the remaining two 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 2013 notifications are reported in Table 5 by HSE-Area.

There were no cases of Lyme disease (neuroborreliosis) and two cases of Dengue fever reported in Q2 2013.

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

Health Protection Surveillance Centre
25-27 Middle Gardiner St, Dublin 1, Ireland
www.hpsc.ie
Tel: +353-1-8765300
Fax: +353-1-8561299

Report prepared by:
Ms Fiona Cloak
Dr Patricia Garvey
Ms. Sarah Jackson
Dr Paul McKeown