

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 3 –2014

December 2014

This is the third quarterly report for 2014 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 3, 2014

Month	HSE area	Location	No. ill *	No. Hosp.	Date Onset	Suspect mode of transmission	Disease
Jul	NE	Creche	23	4	30/03/2014	P-P	VTEC
Jul	E	Nursing home	6	-	04/07/2014	P-P	AIG
Jul	W	Community outbreak	2	0	19/06/2014	Unknown	VTEC
Jul	NW	Nursing home	12	0	14/07/2014	P-P	Norovirus
Jul	NE	Creche	-	-	03/07/2014	Not Specified	VTEC
Jul	E	Nursing home	17	1	12/07/2014	P-P	Norovirus
Jul	NW	Hospital	19	0	25/07/2014	P-P	Norovirus
Jul	W	Nursing home	14	0	22/07/2014	P-P	AIG
Jul	E	Nursing home	11	-	30/07/2014	P-P	Norovirus
Jul	MW	Hospital	6	6	29/07/2014	Airborne	Norovirus
Aug	NW	Residential institution	3	0	31/07/2014	Unknown	AIG
Aug	NW	Hospital	7	-	-	P-P	Norovirus
Aug	NW	Comm. Hosp/Long-stay unit	6	0	15/08/2014	P-P	AIG
Aug	S	Hotel	60	0	02/08/2014	P-P	Norovirus
Aug	MW	Nursing home	-	-	14/08/2014	P-P	Norovirus
Aug	NW	Restaurant / Cafe	12	0	17/08/2014	P-P	Rotavirus
Aug	S	Hospital	19	7	17/08/2014	P-P & AB	Norovirus
Aug	S	Comm. Hosp/Long-stay unit	14	0	23/08/2014	P-P & AB	AIG
Aug	NE	Hospital	13	-	19/08/2014	P-P	AIG
Aug	S	Residential institution	8	0	26/08/2014	P-P	AIG
Aug	SE	Residential institution	8	0	24/08/2014	P-P	Norovirus
Sep	NW	Residential institution	2	0	25/08/2014	P-P	AIG
Sep	SE	Hotel	4	2	21/08/2014	FB	VTEC
Sep	W	Guest house / B and B	9	0	01/09/2014	P-P	AIG
Sep	NW	Comm. Hosp/Long-stay unit	-	-	05/09/2014	P-P	AIG
Sep	S	School	20	0	28/08/2014	P-P	AIG
Sep	NE	Nursing home	12	0	08/09/2014	P-P & AB	Norovirus
Sep	SE	Creche	3	0	25/08/2014	P-P	VTEC
Sep	S	Nursing home	12	0	09/09/2014	P-P & AB	AIG
Sep	MW	Residential institution	-	-	13/09/2014	P-P	Norovirus
Sep	NW	Nursing home	3	0	-	P-P	AIG
Sep	W	Hospital	7	-	17/09/2014	P-P	AIG
Sep	SE	Hospital	52	-	25/08/2014	P-P	Norovirus
Sep	MW	Residential institution	-	-	-	P-P	Clostridium difficile
Sep	E	Nursing home	11	1	22/09/2014	P-P	AIG
Sep	MW	Hospital	7	7	24/09/2014	P-P	Norovirus

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 3, 2014

Month	HSE area	Location	No. ill *	No. Hosp.	Date Onset	Suspect mode of transmission	Disease
Jul	M	Private house	-	-	-	Animal contact	Cryptosporidiosis
Jul	S	Private house	2	2	26/05/2014	P-P	Cryptosporidiosis
Jul	S	Private house	2	0	14/06/2014	FB	Salmonellosis
Jul	W	Extended family	4	0	23/06/2014	P-P	VTEC
Jul	M	Private house	1	0	21/06/2014	Unknown	VTEC
Jul	W	Private house	4	0	15/06/2014	P-P	VTEC
Jul	M	Private house	1	0	02/07/2014	Unknown	VTEC
Jul	W	Private house	2	0	-	P-P	Cryptosporidiosis
Jul	S	Private house	-	-	01/06/2014	P-P	VTEC
Jul	E	Private house	2	1	08/07/2014	P-P & FB	Salmonellosis
Jul	S	Private house	2	0	10/07/2014	Unknown	VTEC
Jul	SE	Private house	1	1	13/07/2014	Unknown	VTEC
Jul	M	Private house	1	0	15/07/2014	Unknown	VTEC
Aug	MW	Private house	-	-	17/07/2014	Animal contact	VTEC
Aug	W	Private house	1	-	-	P-P	Giardiasis
Aug	NE	Private house	2	2	27/07/2014	P-P	VTEC
Aug	E	Private house	1	1	26/07/2014	Unknown	VTEC
Aug	S	Private house	2	-	15/07/2014	P-P	VTEC
Aug	NW	Private house	2	-	29/07/2014	P-P	VTEC
Aug	S	Private house	-	-	30/07/2014	WB	VTEC
Aug	SE	Private house	4	-	29/07/2014	P-P	Cryptosporidiosis
Aug	MW	Not Specified	1	-	04/07/2014	P-P	VTEC
Sep	NE	Extended family	1	-	23/07/1958	Unknown	Shigellosis
Sep	MW	Private house	1	1	08/02/2014	P-P	VTEC
Sep	M	Private house	1	0	31/08/2014	WB	VTEC
Sep	M	Private house	3	1	25/08/2014	Unknown	VTEC
Sep	M	Private house	1	1	09/09/2014	Unknown	VTEC
Sep	W	Private house	2	0	26/08/2014	P-P	VTEC
Sep	M	Private house	1	0	12/09/2014	Animal contact	VTEC
Sep	NW	Private house	-	-	02/09/2014	P-P	VTEC
Sep	NW	Extended family	-	-	05/09/2014	P-P	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 3, 2014

Month	HSE area	Type of outbreak	Location	No. ill *	No. Hosp.	Date Onset	Suspect mode of transmission	Organism
Jul	SE	General	Comm. Hosp/Long-stay unit	4	2	25/06/2014	P-P	Acute respiratory illness
Jul	W	General	Community outbreak	3	-	27/04/2014	P-P	Pertussis
Jul	NW	Family	Private house	-	-	13/06/2014	P-P	Mumps
Jul	E	General	Residential institution	7	2	10/07/2014	P-P	Human metapneumovirus
Jul	S	Family	Not Specified	2	-	-	Not Specified	Viral meningitis
Jul	W	Family	Travel related	3	-	01/07/2014	P-P	Pertussis
Aug	SE	General	Community outbreak	50	1	24/07/2014	P-P & AB	Mumps
Aug	SE	General	Residential institution	4	1	01/08/2014	P-P	Suspected Scabies
Aug	NW	General	Coach tour	10	0	20/08/2014	Unknown	Acute respiratory illness
Aug	MW	General	Nursing home	3	-	29/05/2014	P-P	MDR Urinary Tract Infection
Sep	W	General	Hospital	2	2	-	Unknown	Pseudomonas
Sep	NE	Family	Other	2	2	01/08/2014	Other	Haemophilus influenzae (invasive)
Sep	E	General	School	6	0	07/09/2014	AB	Possible Mumps
Sep	NE	General	Nursing home	9	-	15/09/2014	AB	Acute respiratory illness
Sep	S	General	School	30	-	19/09/2014	P-P	Viral illness

P-P denotes Person-to-Person transmission, WB denotes waterborne; AB denotes airborne; IDU denotes Injecting Drug Use; NK denotes unknown; CRE denotes Carbapenem-resistant Enterobacteriaceae
 * 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 third quarter of 2014. There were 36 general and 31

family IID outbreaks reported during this period, resulting in at least 447 people being ill.

Acute infectious gastroenteritis (n=15) and Norovirus (n=14) were responsible for the majority of general outbreaks of IID (81%).

The most common causes of family outbreaks of IID was VTEC (n=23) [74%]. The other diseases responsible for family outbreaks were cryptosporidiosis, giardiasis, shigellosis and salmonellosis (Table 2).

Thirty-one general IID outbreaks were transmitted person-to-person/person-to-person and airborne (86%). Twenty-seven general outbreaks (75%) were reported to have occurred in healthcare settings, i.e. hospitals or residential institutions, during this period.

There were fifteen non-IID outbreaks reported during quarter 3 - see table 3.

Table 4 outlines the outbreak rate per HSE-area for outbreaks notified during Q3 2014.

Table 4. Number of Infectious Disease Outbreaks by HSE Area, Q3 2014

HSE Area	No. of outbreaks	Rate per 100,000 population
E	8	0.5
M	8	3.0
MW	9	2.4
NE	8	2.0
NW	14	5.4
SE	9	2.0
S	14	2.1
W	12	2.7
Total	82	1.8

NOTIFICATIONS OF INFECTIOUS INTESTINAL, ZONOTIC AND VECTORBORNE DISEASE

The number of notifications of infectious intestinal, zoonotic and vectorborne disease by HSE-Area for the third quarter of 2014 is shown in Table 5.

Table 5. Intestinal Infectious, Zoonotic and Vectorborne Disease Notifications Quarter 3, 2014 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	231	58	59	58	37	130	104	91	768
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	5	9	2	6	3	9	16	13	63
Giardiasis	6	2	1	1	0	0	6	5	21
Listeriosis	0	0	0	0	0	1	3	2	6
Noroviral infection	110	4	16	11	7	5	10	10	173
Paratyphoid	~	~	~	~	~	~	~	~	2
Rotavirus infection ^a	70	86	24	51	34	40	36	79	420
Salmonellosis	32	11	7	7	4	10	11	6	88
Shigellosis	6	0	1	3	0	5	1	3	19
Staphylococcal food poisoning	0	0	0	0	0	0	0	0	0
Typhoid	~	~	~	~	~	~	~	~	1
Verotoxigenic <i>Escherichia coli</i> infection ^b	33	23	42	38	10	35	38	28	247
Yersiniosis	0	0	0	0	0	1	0	0	1
Zoonotic Disease									
Anthrax	0	0	0	0	0	0	0	0	0
Brucellosis	0	0	0	0	0	0	1	0	1
Echinococcosis	0	0	0	0	0	0	0	0	0
Leptospirosis	2	2	1	0	1	1	0	0	7
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	0	0	0	0	0	1	1	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	3	0	0	0	0	1	1	3	8
Lyme disease (neuroborreliosis) ^c	0	0	0	0	0	0	6	0	6
Malaria	20	1	1	4	1	3	4	4	38
Typhus	0	0	0	0	0	0	0	0	0
West Nile fever ^c	0	0	0	0	0	0	0	0	0

^aNotifiable under the category Acute Infectious Gastroenteritis 2004-2011

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

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

SALMONELLA ENTERICA

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 third quarter of 2014. Comparison of trends with previous years is shown in Figure 1.

Table 6. Salmonellosis Notifications by HSE-Area and Month, Q3 2014

Month	E	M	MW	NE	NW	SE	S	W	Total
Jul	12	2	1	3	2	3	4	2	29
Aug	10	5	2	1	1	5	5	1	30
Sep	10	4	4	3	1	2	2	3	29
Total	32	11	7	7	4	10	11	6	88

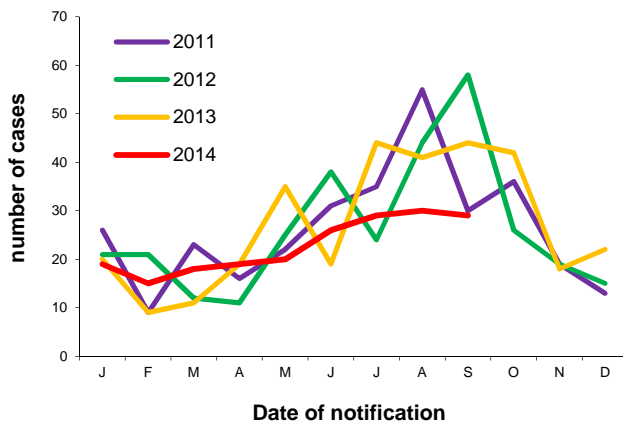


Figure 1. Seasonal Distribution of Human Salmonellosis Notifications, 2011 to end quarter 3 2014

Table 7 shows the serotypes for the *Salmonella* isolates typed by the NSSLRL in the third quarter of 2014 by HSE area (n=88). The commonest human serotypes isolated were *S. Typhimurium** (n=42, 48%) and *S. Enteritidis* (n= 14, 16%).

Table 8 shows the serotype distribution of confirmed *Salmonella* notifications by travel status this quarter among salmonellosis notifications on CIDR. 26% (n=23) were travel-associated, 40% (n=35) were indigenous and for 30 cases, the country of infection was unknown/not specified.

Outbreaks of Salmonellosis

There were two family outbreaks of salmonellosis notified in Q3 2014 (Tables 1 & 2).

Table 7. Serotypes of *S. enterica* Referred to NSSLRL in Quarter 3, 2014 (Data are provided courtesy of Prof. Martin Cormican, Dr. Niall de Lappe and Ms. Jean O'Connor, NSSLRL).

Serotype	E	M	MW	NE	NW	SE	S	W	Total
4,[5],12:i:-	1	1	1	2	5	2	1	0	13
Adabraka	0	0	0	0	0	0	0	1	1
Bareilly	1	0	0	0	0	0	0	0	1
Braenderup	1	0	0	0	0	0	0	0	1
Bredeney	1	0	0	0	1	1	0	0	3
Corvallis	1	0	0	0	0	0	0	0	1
Dublin	0	0	0	0	0	0	1	0	1
Durham	0	0	0	0	0	0	0	1	1
Enteritidis	6	2	0	1	1	2	0	2	14
Infantis	0	0	1	0	0	1	0	0	2
IV 50:g,z51	0	1	0	0	0	0	0	0	1
Java	1	0	0	0	0	0	0	0	1
Larochelle	1	0	0	0	0	0	0	0	1
Napoli	0	0	0	0	0	1	0	0	1
Newport	1	2	0	0	0	0	0	0	3
Paratyphi A	1	1	0	0	0	0	0	0	2
Rissen	2	0	0	0	0	0	0	0	2
Stanley	3	0	0	0	0	0	0	0	3
Typhi	1	0	0	0	0	1	0	0	2
Typhimurium	8	2	3	3	0	5	7	1	29
Unnamed	2	1	0	0	0	0	0	0	3
Virchow	0	0	0	0	0	0	1	0	1
Wippra	1	0	0	0	0	0	0	0	1
Grand Total	32	10	5	6	7	13	10	5	88

Table 8. Confirmed Salmonella notifications by Serotype and Travel Status, Q3 2014 [n(%)]

Serotype	Indigenous	Travel-associated	Unk/not specified	Total
S. Enteritidis	6 (17%)	5 (22%)	4 (13%)	15 (17%)
S. Typhimurium	18 (51%)	6 (26%)	14 (47%)	38 (43%)
Other	10 (29%)	11 (48%)	10 (33%)	31 (35%)
Salmonella spp	1 (3%)	1 (4%)	2 (7%)	4 (5%)
Total	35 (100%)	23 (100%)	30 (100%)	88 (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 two cases of paratyphoid reported on CIDR in Q3 2014, however the country of infection is unknown/not specified for both. There was one case of typhoid notified this quarter, associated with travel to the Indian Sub-Continent. (Table 5).

* includes 13 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 forty seven cases of VTEC were notified this quarter, the regional distribution of which is shown in Table 9. This compares with 267 VTEC cases notified in Q3 2013 and 257 in Q3 2012 (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, Q3 2014.

Table 9. Number VTEC notified by case classification and HSE-area, Q3 2014

Case classification	E	M	MW	NE	NW	SE	S	W	Total
Conf	33	18	32	12	10	30	38	28	201
Prob	0	5	10	26	0	5	0	0	46
Poss	0	0	0	0	0	0	0	0	0
Total	33	23	42	38	10	35	38	28	247

Table 10. VTEC notified by serogroup and month, Q3 2014

Month	O157	O26	Other	Total
Jul	12	54	45	111
Aug	21	23	25	69
Sep	28	18	21	67
Total	61	95	91	247

Twelve VTEC cases notified this quarter was reported as having developed HUS. Six were infected with *E. coli* O157, three with *E. coli* O26, and one each with *E. coli* O103 and *E. coli* O145. The final HUS case was infected with an ungroupable strain.

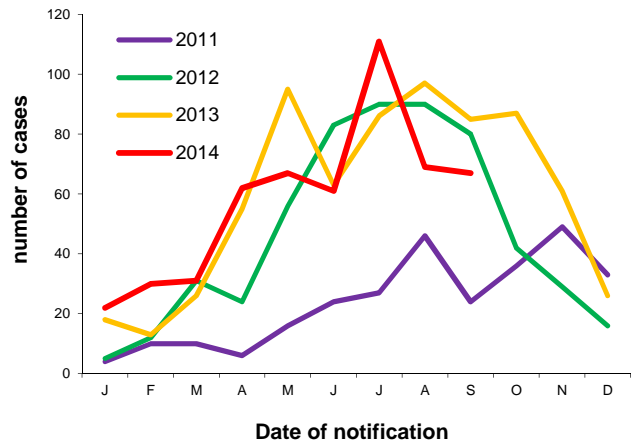


Figure 2. Seasonal distribution of VTEC cases notified 2011 to end quarter 3 2014

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 Q3 2014.

Table 11. Verotoxin typing profiles of *E. coli* referred to the HSE DML Public Health Laboratory, Cherry Orchard Hospital in Q3 2014 (Data are provided courtesy of Dr. Eleanor McNamara and Dr. Anne Carroll).

Serogroup	<i>vt1</i>	<i>vt2</i>	<i>vt1+vt2</i>	Not spec.	Total
O157	1	46	12	2	61
O26	35	6	51	4	96
Other	32	29	20	9	90
Total*	68	81	83	15	247

Outbreaks of VTEC infection

During this quarter, there were five general and twenty-three family outbreaks of VTEC infection reported (see Table 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 2014 are shown in Table 12. There were 768 notifications this quarter, compared to 681 in the same period last year and 736 in Q3 2012 (Figure 3).

Table 12. Campylobacter notifications by HSE-Area and month, Q3 2014

Month	E	M	MW	NE	NW	SE	S	W	Total
Jul	91	30	26	21	18	63	53	40	342
Aug	64	9	20	21	16	33	17	22	202
Sep	76	19	13	16	3	34	34	29	224
Total	231	58	59	58	37	130	104	91	768

Outbreaks of Campylobacter infection

There were no outbreaks of campylobacteriosis reported in Q3 2014 (Tables 1 and 2).

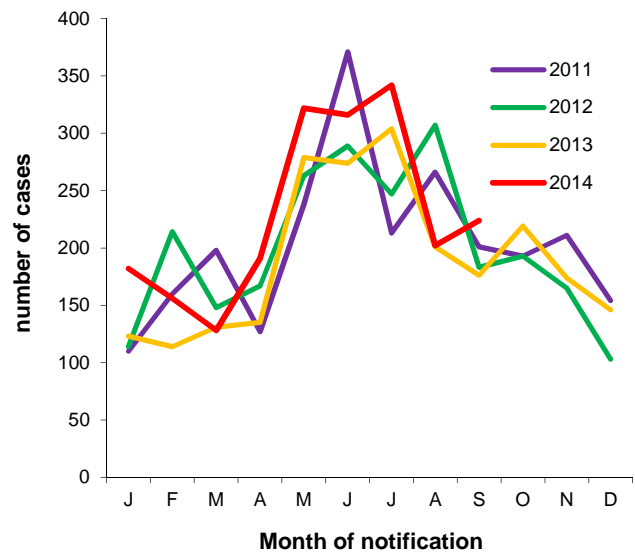


Figure 3. Seasonal distribution of Campylobacter notifications 2011 to end quarter 3 2014

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 2014, 63 cases of cryptosporidiosis were notified (Table 13), compared to 56 in the same period in 2013 and 103 in Q3 2012 (Figure 4).

Table 13. Cryptosporidiosis notifications by HSE-Area and month, Q3 2014

Month	E	M	MW	NE	NW	SE	S	W	Total
Jul	2	7	1	4		4	12	7	37
Aug	1	0	0	1	1	4	2	3	12
Sep	2	2	1	1	2	1	2	3	14
Total	5	9	2	6	3	9	16	13	63

Outbreaks of cryptosporidiosis

There were four family outbreaks of cryptosporidiosis reported in quarter 3 2014 (Tables 1 and 2).

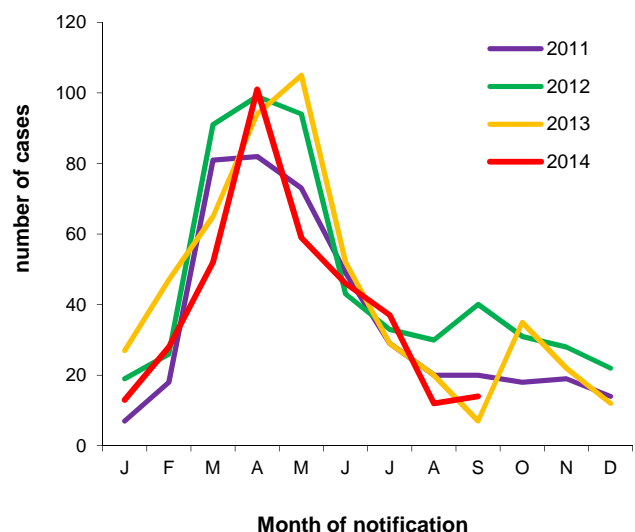


Figure 4. Seasonal distribution of cryptosporidiosis notifications 2011 to end quarter 3 2014

NOROVIRUS

Human noroviral infection became a notifiable disease on January 1st 2004. There were 173 cases notified in the third quarter of 2014 (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, Q3 2014

Month	E	M	MW	NE	NW	SE	S	W	Total
Jul	45	2	3	4	3	1	0	2	60
Aug	31	1	8	2	4	1	1	7	55
Sep	34	1	5	5	0	3	9	1	58
Total	110	4	16	11	7	5	10	10	173

Norovirus outbreaks

Norovirus or suspect viral aetiology is the commonest cause of outbreaks of acute gastroenteritis in Ireland. In the third quarter of 2014, there were 14 outbreaks confirmed as being caused by this virus, involving at least 230 people

becoming ill, as outlined in tables 1 & 2. The seasonal trend is outlined in figure 5.

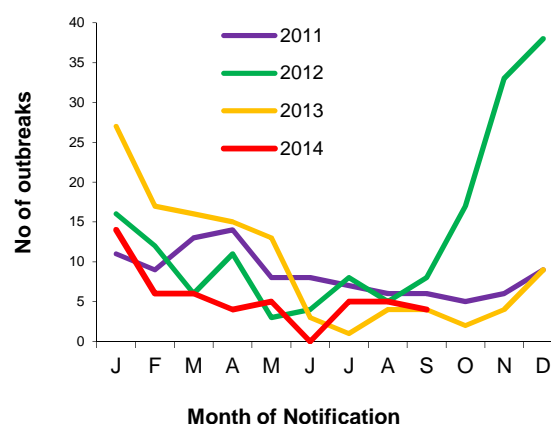


Figure 5. Seasonal distribution of confirmed norovirus outbreaks, 2011 to end quarter 3 2014

SHIGELLA

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

During Q3 2014, nineteen cases of shigellosis were notified (table 5). This compares with twenty-one cases notified in Q3 2013 and nine in Q3 2012.

Eight cases were travel related (associated with travel to India, Egypt and Morocco), Ireland was reported as country of infection for one case and country of infection was reported as unknown/not specified for the remaining ten cases.

Outbreaks of shigellosis

There was one family outbreak of shigellosis notified in Q3 2014 (table 2).

Table 15: Species and serotype distribution of Q3 2014 human *Shigella* isolates (Shigella typing services are provided courtesy of Prof. Martin Cormican, Dr. Niall de Lappe and Ms. Jean O'Connor at the National Salmonella Shigella and Listeria Reference Laboratory).

Serotype	Number of isolates
<i>Shigella flexneri</i> 1b	3
<i>Shigella flexneri</i> 2a	1
<i>Shigella flexneri</i> 2b	1
<i>Shigella flexneri</i> 3a	1
<i>Shigella flexneri</i> 4	1
<i>Shigella flexneri</i> 4a	1
<i>Shigella sonnei</i>	11
Total	19

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 2014, twenty-one cases of giardiasis were notified (table 5); this compares with 15 cases notified in Q3 2013 and 11 in Q3 2012.

Ten cases were reported to have acquired their illness abroad. Country of infection was reported as Ireland for three cases and 'not specified' or 'unknown' for the remaining eight cases.

Outbreaks of giardiasis

There was one family outbreak of giardiasis notified in Q3 2014 (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 were six cases (four adult/juvenile, one pregnancy-related and one neonatal) of listeriosis notified in Q3 2014, compared to one case in quarter 3 2013 and three in quarter 3 2012. Five isolates were referred for typing to NSSLRL this quarter (Table 16).

Table 16: Serotypes of Q3 2014 human *Listeria* isolates referred to the NSSLRL (Typing services are provided by Prof. Martin Cormican, Dr. Niall de Lappe and Ms. Jean O’Connor at the National Salmonella Shigella and Listeria Reference Laboratory).

Serotype	Number of isolates
1/2a	3
4b	2
Total	5

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 third quarter of 2014 are shown in Table 17.

Table 17. Rotavirus infection by HSE-Area and month, Q3 2014

Month	E	M	MW	NE	NW	SE	S	W	Total
Jul	30	36	12	38	25	16	10	56	223
Aug	15	26	10	6	8	13	13	16	107
Sep	25	24	2	7	1	11	13	7	90
Total	70	86	24	51	34	40	36	79	420

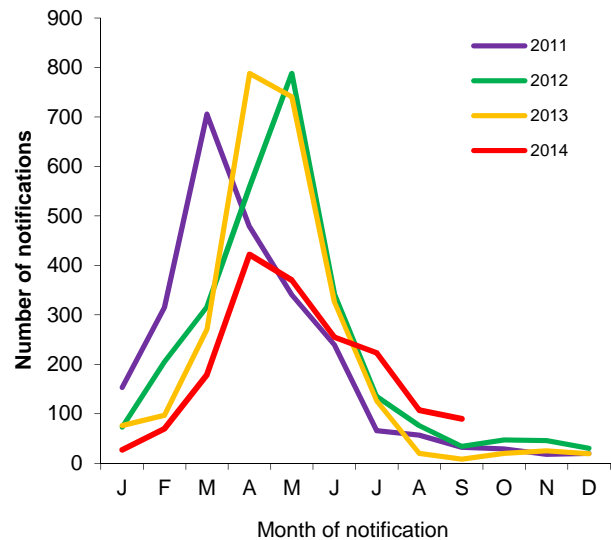


Figure 6. Seasonal distribution of rotavirus notifications, 2011 to end quarter 3 2014

Outbreaks of rotavirus

There was one general outbreak of rotavirus notified this quarter (Table 1).

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.

NON-IID ZONOTIC DISEASES

Non-IID zoonoses now notifiable include: anthrax, brucellosis, echinococcosis, leptospirosis, plague, Q fever, toxoplasmosis, trichinosis and rabies. The Q3 2014 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 six cases notified in the same period in 2013 and six cases in Q3 2012.

There were seven cases of leptospirosis notified in Q3 2014; this compares with three in Q3 2013 and five in Q3 2012. Three cases in Q2 2014 were reported to have acquired their illness through occupational exposure, while a further three cases are reported to have been exposed during leisure activity. The source of exposure for the remaining case is unknown.

There was one case of brucellosis and no cases of Q fever, echinococcosis or trichinosis notified this quarter.

MALARIA

Malaria is a notifiable disease for many years. The Q3 2014 notifications are reported in table 5 by HSE-Area.

Thirty-eight cases of malaria were notified in Q3 2014. This compares with thirty-three cases reported in Q3 2013 and thirty-six in Q3 2012.

Twenty-nine cases were reported as *P. falciparum*, four as *P. vivax* and one as *P. ovale*. The organism was not specified for the remaining four cases.

Twenty-six cases were exposed in Africa and three in the Indian subcontinent. The country of infection is unknown/not specified for the remaining nine cases.

The reason for travel for seventeen cases was reported as 'visiting family in country of origin', four cases reported business/professional travel, five cases were in new entrants to Ireland and one case was reported in a foreign visitor who became ill while visiting Ireland. The reason for travel was not specified/unknown for the remaining eleven 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 Q3 2014 notifications are reported in Table 5 by HSE-Area.

There were six cases of Lyme disease (neuroborreliosis) and eight cases of Dengue fever reported in Q3 2014.

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

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