

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 3–2015

December 2015

This is the third quarterly report for 2015 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, 2015

Month	HSE area	Location	No. ill *	No. Hosp.	Date Onset	Suspect mode of transmission	Disease
Jul	E	Nursing home	19	0	18/06/2015	Unknown	Noroviral infection
Jul	E	Nursing home	7	0	19/06/2015	Unknown	Noroviral infection
Jul	S	Comm. Hosp/Long-stay unit	36	0	26/06/2015	P-P	AIG
Jul	S	Residential institution	8	0	08/04/2015	P-P	Noroviral infection
Jul	E	Nursing home	-	-	07/07/2015	FB & Airborne	AIG
Jul	M	Workplace	5	0	-	Animal contact	Campylobacter
Jul	W	Community outbreak	4	0	28/06/2015	P-P	VTEC
Jul	MW	Other	35	0	07/06/2015	Unknown	AIG
Jul	E	Nursing home	6	-	10/07/2015	Unknown	Clostridium difficile
Jul	E	Nursing home	6	-	26/07/2015	Unknown	AIG
Aug	E	Hospital	-	-	06/07/2015	P-P	Clostridium difficile
Aug	E	Nursing home	45	-	07/08/2015	P-P	Adenovirus
Aug	S	Hotel	60	-	06/08/2015	P-P	Noroviral infection
Aug	SE	Nursing home	11	-	04/08/2015	P-P	Suspected norovirus
Aug	S	Residential institution	20	0	11/08/2015	P-P	Noroviral infection
Aug	M	Extended family	4	0	19/08/2015	P-P & WB	VTEC
Sep	W	Hospital	3	3	-	P-P	Clostridium difficile
Sep	S	Residential institution	13	0	05/09/2015	P-P	AIG
Sep	S	Residential institution	3	0	02/09/2015	P-P	Suspected norovirus
Sep	NE	Comm. Hosp/Long-stay unit	3	-	-	Not Specified	Clostridium difficile
Sep	E	Nursing home	2	0	14/09/2015	P-P	Noroviral infection
Sep	SE	Residential institution	2	-	13/09/2015	P-P	Suspected norovirus
Sep	E	Nursing home	7	-	16/08/2015	P-P	AIG
Sep	NW	Comm. Hosp/Long-stay unit	7	-	19/09/2015	P-P	AIG
Sep	S	Childcare facility	4	0	01/08/2015	P-P	VTEC
Sep	S	Comm. Hosp/Long-stay unit	4	0	29/09/2015	Unknown	AIG
Sep	MW	Childcare facility	2	0	18/09/2015	P-P & Animal	Campylobacter
Sep	S	Comm. Hosp/Long-stay unit	11	1	25/09/2015	P-P	AIG
Sep	SE	Nursing home	18	-	01/10/2015	P-P	Noroviral infection

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, 2015

Month	HSE area	Location	No. ill *	No. Hosp.	Date Onset	Suspect mode of transmission	Disease
Jul	NE	Private house	1	-	10/04/2015	Unknown	VTEC
Jul	NE	Private house	1	-	-	Unknown	VTEC
Jul	S	Private house	2	0	16/06/2015	P-P & WB	Cryptosporidiosis
Jul	S	Private house	4	0	04/06/2015	P-P	VTEC
Jul	S	Private house	2	0	20/06/2015	P-P	VTEC
Jul	S	Private house	1	1	17/06/2015	P-P	VTEC
Jul	NE	Not Specified	3	1	24/06/2015	P-P	VTEC
Jul	M	Private house	1	0	26/06/2015	Unknown	VTEC

Jul	M	Private house	1	0	01/07/2015	Unknown	VTEC
Jul	M	Extended family	8	0	-	Unknown	Noroviral infection
Jul	E	Extended family	4	1	23/06/2015	P-P	VTEC
Jul	W	Private house	2	0	24/07/2015	P-P & Animal	VTEC
Aug	E	Private house	2	0	11/06/2015	FB	VTEC
Aug	M	Private house	1	1	25/07/2015	Unknown	VTEC
Aug	NW	Private house	5	0	03/07/2015	P-P	Cryptosporidiosis
Aug	W	Private house	1	1	24/07/2015	Unknown	VTEC
Aug	SE	Private house	2	2	29/07/2015	P-P	Salmonella
Aug	M	Private house	1	1	-	Unknown	VTEC
Aug	M	Private house	-	-	03/08/2015	WB	VTEC
Aug	M	Private house	1	-	-	WB	VTEC
Aug	NW	Private house	2	0	02/07/2015	P-P	VTEC
Aug	NW	Private house	2	0	05/08/2015	P-P	VTEC
Aug	W	Private house	2	-	-	P-P	Rotavirus
Aug	M	Private house	-	-	03/08/2015	Unknown	VTEC
Aug	M	Childcare facility	1	-	23/08/2015	Unknown	VTEC
Aug	M	Nursing home	2	-	27/08/2015	Unknown	AIG
Sep	W	Private house	2	0	10/08/2015	P-P & Animal	Cryptosporidiosis
Sep	W	Private house	0	0	-	Unknown	VTEC
Sep	SE	Private house	2	0	27/08/2015	P-P	Cryptosporidiosis
Sep	M	Not Specified	-	-	29/08/2015	Animal contact	VTEC
Sep	S	Private house	1	0	18/07/2015	P-P & WB	VTEC
Sep	S	Private house	2	0	08/08/2015	P-P & WB	VTEC
Sep	S	Private house	2	0	12/08/2015	P-P & WB	VTEC
Sep	S	Private house	2	0	11/08/2015	P-P & WB	VTEC
Sep	M	Private house	2	-	08/09/2015	Unknown	VTEC
Sep	W	Private house	2	0	30/08/2015	P-P	VTEC
Sep	MW	Private house	2	0	28/08/2015	FB & WB	Cryptosporidiosis
Sep	NE	Private house	1	-	17/08/2015	WB	VTEC
Sep	MW	Private house	-	-	29/07/2014	P-P & WB	VTEC
Sep	NE	Private house	1	-	27/08/2015	WB	VTEC
Sep	NE	Private house	1	-	21/08/2015	Not Specified	VTEC
Sep	W	Private house	2	0	16/08/2015	P-P	VTEC
Sep	M	Private house	2	0	20/08/2015	P-P & Animal	Cryptosporidiosis
Sep	M	Private house	2	1	16/08/2015	Unknown	Salmonella
Sep	NE	Private house	1	-	27/08/2015	Unknown	VTEC
Sep	NE	Private house	3	-	24/08/2015	Unknown	VTEC
Sep	M	Private house	2	1	15/09/2015	Unknown	VTEC
Sep	NE	Private house	2	-	06/09/2015	P-P & Animal	Salmonella
Sep	M	Private house	1	-	15/09/2015	Unknown	VTEC
Sep	M	Nursing home	7	0	-	Unknown	AIG
Sep	NE	Private house	2	1	13/09/2015	Not Specified	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, 2015

Month	HSE area	Type of outbreak	Location	No. ill *	No. Hosp.	Date Onset	Suspect mode of transmission	Organism
Jul	W	Family	Private house	2	-	11/05/2015	P-P	Mumps
Jul	E	General	Hospital	6	-	30/04/2015	P-P	MRSA
Jul	MW	General	Not Specified	-	-	22/06/2015	P-P	Mumps
Jul	W	Family	Private house	3	0	07/06/2015	P-P	Mumps
Jul	E	Family	Private house	3	-	21/07/2015	P-P & Airborne	Possible Mumps
Jul	E	Family	Private house	2	2	-	P-P & Airborne	Possible Varicella
Jul	E	Family	Private house	3	1	12/07/2015	Unknown	Mumps
Aug	E	Family	Private house	2	0	08/06/2015	P-P	Pertussis
Aug	E	General	Hospital	9	-	17/08/2015	P-P	MRSA
Aug	NW	Family	Private house	2	0	24/07/2015	P-P	Mumps
Aug	W	Family	Private house	3	1	04/08/2015	P-P	Mumps
Aug	M	Family	Private house		-	20/07/2015	P-P	Mumps
Aug	E	General	Nursing home	30	-	20/08/2015	P-P & Airborne	Rhinovirus
Sep	E	General	University/College		-	19/08/2015	P-P	Mumps
Sep	S	General	Community outbreak	5	1	04/08/2015	P-P & Airborne	Mumps
Sep	NW	General	Restaurant / Cafe	2	2	26/06/2015	P-P & Airborne	Measles
Sep	W	Family	Private house	4	0	20/08/2015	P-P	Mumps
Sep	SE	General	Comm. Hosp/Long-stay unit	4	1	29/08/2015	P-P	Respiratory illness
Sep	S	Family	Private house	3	-	01/02/2015	P-P & Airborne	Tuberculosis
Sep	E	General	Childcare facility	10	1	07/09/2015	P-P	Hand Foot and Mouth Disease
Sep	NW	General	Nursing home	8	0	01/09/2015	P-P & Airborne	Acute respiratory infection
Sep	S	General	School	8	-	24/09/2015	P-P & Airborne	Mumps
Sep	S	General	Community outbreak	3	0	16/09/2015	P-P & Airborne	Mumps
Sep	W	Family	Private house	2	-	-	P-P	Hepatitis B
Sep	E	Family	Private house		-	19/09/2014	P-P	Hepatitis A

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 are 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 2015. There were 29 general and 51

family IID outbreaks reported during this period, resulting in at least 441 people being ill.

Norovirus/suspected norovirus (n=10) was responsible for the most general outbreaks of IID (34%), followed by acute infectious gastroenteritis (n=9).

The most common cause of family outbreaks of IID was VTEC (n=38) [74%]. The other diseases responsible for family outbreaks were acute infectious gastroenteritis, cryptosporidiosis, noroviral infection, rotavirus and salmonellosis. (Table 2).

Eighteen general IID outbreaks were transmitted person-to-person (62%). Twenty-two general outbreaks (76%) were reported to have occurred in healthcare settings, i.e. hospitals or residential institutions, during this period.

There were twenty-five non-IID outbreaks reported during Q3 2015; 52% (n=13) due to mumps/possible mumps (Table 3).

Table 4 outlines the outbreak rate per HSE-area for outbreaks notified during Q3 2015.

Table 4. Number of Infectious Disease Outbreaks by HSE Area, Q3 2015

HSE Area	No. of outbreaks	Rate per 100,000 population
E	21	1.3
M	20	7.0
MW	5	1.3
NE	11	2.5
NW	7	2.7
SE	6	1.2
S	21	3.2
W	14	3.1
Total	105	2.3

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 2015 is shown in Table 5.

Table 5. Intestinal Infectious, Zoonotic and Vectorborne Disease Notifications Quarter 3, 2015 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
<i>Campylobacter</i> infection	253	60	66	51	26	102	124	86	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	17	14	8	7	5	20	18	19	108
Giardiasis	16	5	2	4	1	0	14	8	50
Listeriosis	0	0	1	1	0	0	0	0	2
Noroviral infection	75	7	9	8	3	4	11	5	122
Paratyphoid	0	0	0	1	0	0	0	0	1
Rotavirus infection ^{a1}	103	35	22	25	33	29	48	57	352
Salmonellosis	26	9	10	7	4	11	13	10	90
Shigellosis	15	1	2	3	0	2	2	3	28
Staphylococcal food poisoning	0	0	0	0	0	0	0	0	0
Typhoid	1	0	0	0	1	0	0	0	2
Verotoxigenic <i>Escherichia coli</i> infection ^b	38	43	34	28	11	31	42	41	268
Yersiniosis	0	0	0	0	0	0	0	3	3
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	3	0	2	1	0	1	0	0	7
Plague	0	0	0	0	0	0	0	0	0
Q Fever	0	0	0	0	0	0	0	1	1
Rabies	0	0	0	0	0	0	0	0	0
Toxoplasmosis	0	0	0	0	0	0	4	2	6
Trichinosis	0	0	0	0	0	0	0	0	0
Vectorborne Disease									
Chikungunya disease	0	0	0	0	1	0	0	0	1
Dengue	3	0	1	1	0	0	0	0	5
Lyme disease (neuroborreliosis)	1	0	0	0	0	0	1	0	2
Malaria	20	1	1	2	0	1	4	1	30
Typhus	0	0	0	0	0	0	0	0	0
West Nile fever ^c	0	0	0	0	0	0	0	0	0

¹ Since March 2013, norovirus and rotavirus notifications from HSE-East are based on laboratory testing results rather than patient episodes. Notifications from HSE-E may also refer to area of laboratory testing rather than area of patient residence.

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 2015. Comparison of trends with previous years is shown in Figure 1.

Table 6. Salmonellosis notifications by HSE-Area and month, Q3 2015

Month	E	M	MW	NE	NW	SE	S	W	Total
Jul	4	1	1	1	3	3	1	2	16
Aug	7	3	4	1	1	5	7	3	31
Sep	15	5	5	5		3	5	5	43
Total	26	9	10	7	4	11	13	10	90

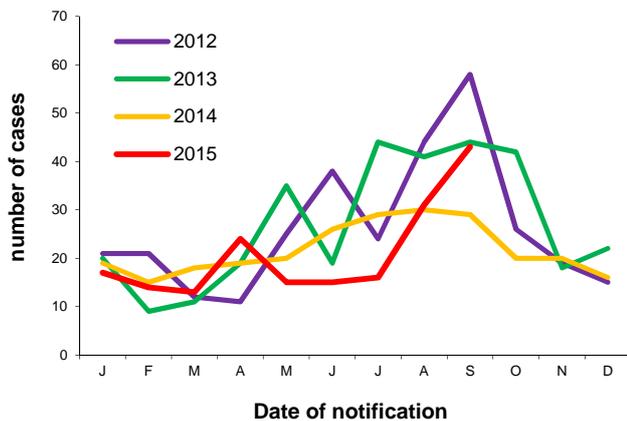


Figure 1. Seasonal distribution of human salmonellosis notifications, 2012 to end quarter 3 2015

Table 7 shows the serotypes for the *Salmonella* isolates typed by the NSSLRL in the third quarter of 2015 by HSE area (n=91). The commonest human serotypes reported were *S. Typhimurium*[†] (n=34, 37%) and *S. Enteritidis* (n=22, 24%).

Table 8 shows the serotype distribution of confirmed *Salmonella* notifications by travel status this quarter among salmonellosis notifications on CIDR. 39% (n=35) were travel-associated, 30% (n=27) were indigenous and for 28 cases, the country of infection was unknown/not specified.

Table 7. Serotypes of human *S. enterica* isolates referred to NSSLRL in Quarter 3, 2015

Serotype	E	M	MW	NE	NW	SE	S	W	Total
4,[5],12:i:-	9	0	1	1	2	4	2	1	20
Adelaide	0	0	0	0	0	0	0	1	1
Agona	0	0	0	0	0	0	0	1	1
Bareilly	0	0	1	0	0	1	0	0	2
Brandenburg	2	0	0	0	0	0	0	0	2
Enteritidis	10	3	3	1	0	1	4	0	22
Hadar	1	0	0	0	0	0	0	0	1
Infantis	0	0	0	0	0	0	1	0	1
Java	2	0	0	0	0	0	0	0	2
Javiana	1	0	0	0	0	0	0	0	1
Kedougou	0	0	0	1	0	0	0	0	1
Kentucky	1	1	1	0	0	0	0	0	3
Livingstone	0	0	0	0	0	1	0	0	1
Lomalinda	1	0	0	0	0	0	0	0	1
Mbandaka	0	0	0	0	0	0	1	0	1
Monschau	1	0	0	0	0	0	0	0	1
Montevideo	0	0	1	0	0	0	0	0	1
Napoli	1	0	0	0	0	0	1	0	2
Newport	2	0	0	0	0	0	0	0	2
Oranienburg	1	0	0	0	0	0	1	0	2
Paratyphi B	0	0	0	1	0	0	0	0	1
Saintpaul	0	1	0	0	0	1	0	0	2
Schwarzengrund	0	0	0	0	0	0	1	0	1
Stanley	0	0	0	1	0	0	0	0	1
Typhi	1	0	0	0	0	0	0	0	1
Typhimurium	1	2	1	3	0	1	1	5	14
Unnamed	1	0	1	0	0	0	1	0	3
Grand Total	35	7	9	8	2	9	13	8	91

Data Source: NSSLRL

Table 8. Confirmed *Salmonella* notifications by serotype and travel status, Q3 2015 [n(%)]

Serotype	Indigenous	Travel-associated	Unk/not specified	Total
S. Enteritidis	1 (4%)	9 (26%)	10 (36%)	20 (22%)
S. Typhimurium*	15 (55%)	9 (26%)	8 (29%)	32 (36%)
Other	10 (37%)	16 (45%)	9 (32%)	35 (39%)
<i>Salmonella</i> spp	1 (4%)	1 (3%)	1 (3%)	3 (3%)
Total	27 (100%)	35 (100%)	28 (100%)	90 (100%)

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

* Includes monophasic *S. Typhimurium* 4,5,12:i:-

Outbreaks of salmonellosis

There were three family outbreaks of salmonellosis notified in Q3 2015 (Tables 1 & 2).

S. Typhi and *S. Paratyphi*

There were two cases of typhoid reported to CIDR in Q3 2015 – one was associated with travel to Nigeria and the country of infection was not specified for the second case.

[†]includes 20 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 sixty-eight cases of VTEC were notified this quarter, the regional distribution of which is shown in Table 9. This compares with 242 VTEC cases notified in Q3 2014 and 267 in Q3 2013 (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 2015.

Table 9. Number VTEC notified by case classification and HSE-area, Q3 2015

Case classification	E	M	MW	NE	NW	SE	S	W	Total
Conf	37	37	25	23	10	31	39	39	241
Prob	1	6	9	5	1	0	3	2	27
Poss	0	0	0	0	0	0	0	0	0
Total	38	43	34	28	11	31	42	41	268

Table 10. VTEC notified by serogroup and month, Q3 2015

Month	O157	O26	Other	Total
Jul	21	38	26	85
Aug	14	21	28	63
Sep	27	41	52	120
Total	62	100	106	268

Six VTEC cases notified this quarter were reported as having developed HUS. 3 VTEC O26, 1 O157, one O177 and one ungroupable/pending. This is a marked decrease from Q3 2014 when 12 HUS cases were notified (6 O157, 3 O26, 1 O103, 1 O145 and one ungroupable strain).

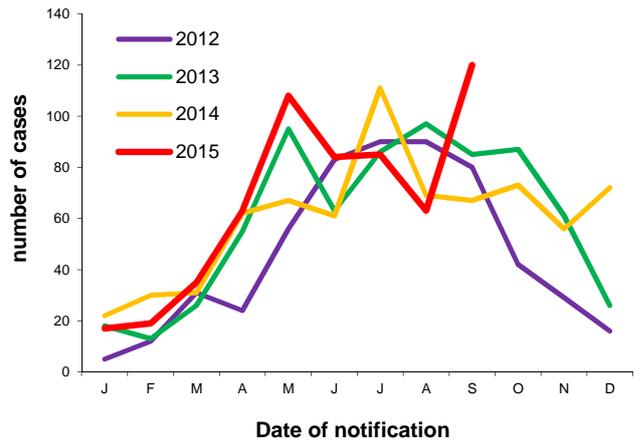


Figure 2. Seasonal distribution of VTEC cases notified 2012 to end quarter 3 2015

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 2015.

Table 11. Verotoxin typing profiles of *E. coli* referred to the HSE DML Public Health Laboratory, Cherry Orchard Hospital in Q3 2015

Serogroup	vt1	vt2	vt1+vt2	Not spec.	Total
O157	0	43	16	3	62
O26	33	4	59	4	100
Other	42	38	16	10	106
Total	75	85	91	17	268

Data Source: PHL Cherry Orchard

Outbreaks of VTEC infection

During this quarter, three general and thirty-eight family outbreaks of VTEC infection were reported (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 2015 are shown in Table 12. There were 768 cases of campylobacteriosis notified in Q3 2015 compared to 767 in the same period in 2014 and 681 in Q3 2013 (Figure 3).

Table 12. Campylobacter notifications by HSE-Area and month, Q3 2015

Month	E	M	MW	NE	NW	SE	S	W	Total
Jul	87	32	26	20	8	39	53	31	296
Aug	78	7	20	16	8	32	35	20	216
Sep	88	21	20	15	10	31	36	35	256
Total	253	60	66	51	26	102	124	86	768

Outbreaks of Campylobacter infection

There were two general outbreaks of campylobacteriosis reported in Q3 2015 (Tables 1 and 2).

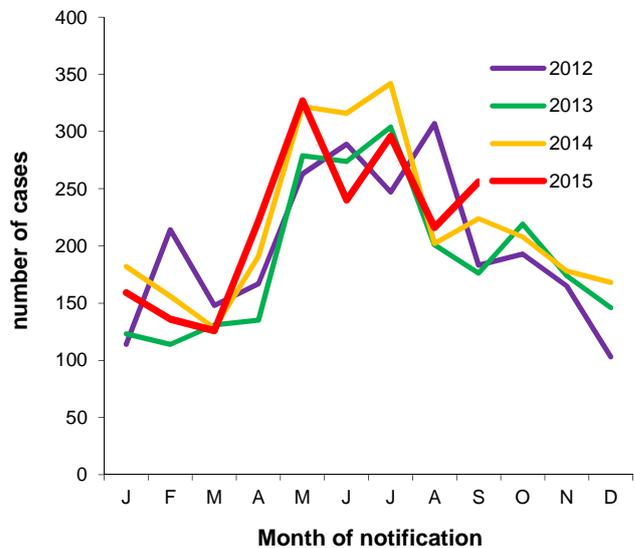


Figure 3. Seasonal distribution of Campylobacter notifications 2012 to end quarter 3 2015

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 2015, 108 cases of cryptosporidiosis were notified (Table 13), compared to 63 in the same period in 2014 and 56 in Q3 2013 (Figure 4).

Table 13. Cryptosporidiosis notifications by HSE-Area and month, Q3 2015

Month	E	M	MW	NE	NW	SE	S	W	Total
Jul	3	3	3	2	3	3	3	8	28
Aug	5	6	0	1	1	6	7	5	31
Sep	9	5	5	4	1	11	8	6	49
Total	17	14	8	7	5	20	18	19	108

Outbreaks of cryptosporidiosis

There were six family outbreaks of cryptosporidiosis reported in quarter 3 2015. (Tables 1 and 2).

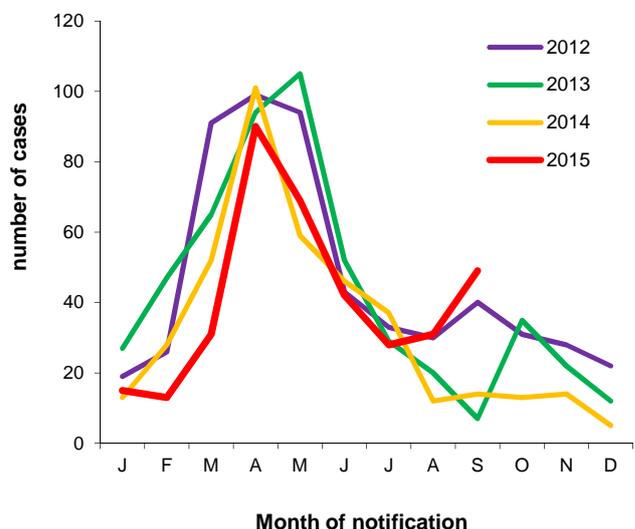


Figure 4. Seasonal distribution of Cryptosporidium notifications 2012 to end quarter 3 2015

NOROVIRUS

Human noroviral infection became a notifiable disease on January 1st 2004. Since March 2013, noravirus notifications from HSE-East are based on laboratory testing results rather than patient episodes. Notifications from HSE-E may also refer to area of laboratory testing rather than area of patient residence.

There were 122 cases notified in the third quarter of 2015 (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 2015

Month	E	M	MW	NE	NW	SE	S	W	Total
Jul	36	5	4	4	2	2	6	3	62
Aug	18	0	0	1	0	0	2	1	22
Sep	21	2	5	3	1	2	3	1	38
Total	75	7	9	8	3	4	11	5	122

Norovirus outbreaks

Norovirus or suspect viral aetiology is the commonest cause of outbreaks of acute

gastroenteritis in Ireland. In the third quarter of 2015, there were eight outbreaks confirmed as being caused by this virus, involving at least 142 people becoming ill, as outlined in tables 1 & 2. The seasonal trend is outlined in figure 5.

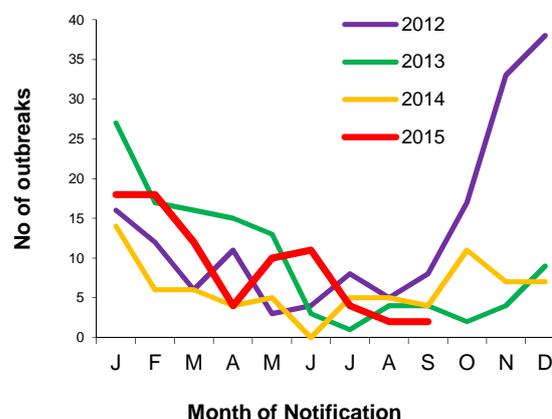


Figure 5. Seasonal distribution of confirmed norovirus outbreaks, 2012 to end quarter 3 2015

SHIGELLA

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

During Q3 2015, twenty-eight cases of shigellosis were notified (Table 5). This compares with nineteen cases notified in Q3 2014 and twenty-one in Q3 2013.

Ten cases were travel related and the county of infection was reported as Ireland for a further ten cases. The country of infection was reported as unknown/not specified for the remaining eight cases.

Table 15: Species and serotype distribution of Q3 2015 human *Shigella* isolates referred to the NSSLRL.

Serotype	Number of isolates
Shigella boydii	2
Shigella boydii 2	1
Shigella dysenteriae	1
Shigella flexneri 1	1
Shigella flexneri 1b	1
Shigella flexneri 2a	3
Shigella flexneri 3a	1
Shigella flexneri 3b	1
Shigella flexneri 4	1
Shigella flexneri X variant	3
Shigella sonnei	12
Total	27

Data Source: NSSLRL

Outbreaks of shigellosis

There were no outbreaks of shigellosis notified in Q3 2015 (Table 2).

GIARDIA

Human giardiasis became a notifiable disease on January 1st 2004. Prior to this, giardiasis was notifiable in Ireland only in young children under the category ‘gastroenteritis in children under 2 years’.

During Quarter 3 2015, fifty cases of giardiasis were notified (Table 5); this compares with 21 cases notified in Q3 2014 and 15 in Q3 2013.

Sixteen cases were reported to have acquired their illness abroad. Country of infection was reported as Ireland for ten cases and ‘not specified’ or ‘unknown’ for the remaining twenty-four cases.

Outbreaks of giardiasis

There were no outbreaks of giardiasis notified in Q3 2015 (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 two adult cases of listeriosis notified in Q3 2015, compared to six cases in quarter 3 2014 and one in quarter 3 2013. Three isolates were

referred for typing to NSSLRL this quarter (Table 16).

Table 16: Serotypes of Q3 2015 human *Listeria* isolates referred to the NSSLRL

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

Data Source: NSSLRL

ROTAVIRUS INFECTION

Prior to 2004, rotavirus cases were notified under the “Gastroenteritis in children under two years” disease category. From 2004 to 2010, rotavirus was notifiable in all age groups under the “Acute Infectious Gastroenteritis” (AIG) disease category, until it became notifiable as a disease in its own right under the Infectious Diseases (Amendment) Regulations 2011 (S.I. No. 452 of 2011). Since March 2013, rotavirus notifications from HSE-East are based on laboratory testing results rather than patient episodes. Notifications from HSE-E may also refer to area of laboratory testing rather than area of patient residence.

Rotavirus notifications for the third quarter of 2015 are shown in Table 17 and Figure 6.

Table 17. Rotavirus infection by HSE-Area and month, Q3 2015

Month	E	M	MW	NE	NW	SE	S	W	Total
Jul	58	26	13	10	21	14	20	32	194
Aug	32	6	4	9	7	10	20	14	102
Sep	13	3	5	6	5	5	8	11	56
Total	103	35	22	25	33	29	48	57	352

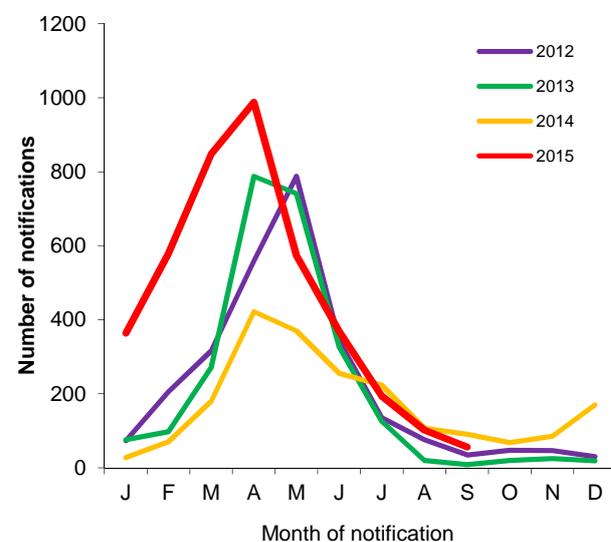


Figure 6. Seasonal distribution of rotavirus notifications, 2012 to end quarter 3 2015

Outbreaks of rotavirus

There was one family outbreak of rotavirus notified this quarter (Table 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 infection/intoxication notified this quarter.

There were no cases of foodborne infection/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 2015 notifications of these zoonotic diseases are reported by HSE-Area in Table 5.

Six cases of toxoplasmosis were notified in this quarter. This compares with four cases notified in the same period in 2014 and six cases in Q3 2013.

There were seven cases of leptospirosis notified in Q3 2015. This compares with seven in Q3 2014 and three in Q3 2013. Three cases this quarter were reported to have had occupational exposure and the possible source of infection was unknown/not specified for the remaining four cases.

There were no cases of brucellosis, echinococcosis or trichinosis notified this quarter. One case of Q Fever was reported in Q3 2015.

MALARIA

Malaria is a notifiable disease for many years. The Q3 2015 notifications are reported in Table 5 by HSE-Area.

Thirty cases of malaria were notified in Q3 2015. This compares with thirty-eight cases reported in Q3 2014 and thirty-three in Q3 2013.

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

Seven cases were exposed in Sub-Saharan Africa and the country of infection is unknown/not specified for the remaining twenty-three cases.

The reason for travel for eight cases was reported as 'visiting family in country of origin', one case cited business travel and the reason for travel was not specified/unknown for the remaining twenty-one 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 2015 notifications are reported in Table 5 by HSE-Area.

There were two cases of Lyme disease (neuroborreliosis) and five cases of Dengue fever

reported in Q3 2015. The country of infection was reported as Haiti/Dominican Republic for two cases of Dengue fever and was unknown/not specified for the remaining three cases.

There were no notifications of West Nile fever this quarter. There was one possible case of Chikungunya disease associated with travel to the South Pacific.

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 Margaret Fitzgerald
Ms. Sarah Jackson
Dr Paul McKeown