SURVEILLANCE OF INFECTIOUS INTESTINAL (IID), ZOONOTIC 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

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This is the third quarterly report for 2016 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 Q3, 2016

Month	HSE area	Location	No. ill *	No. Hosp.	Date Onset	Suspect mode of transmission	Disease
Jul	S	Nursing home	20	0	02/07/2016	P-P	Norovirus
Jul	E	Comm. Hosp/Long-stay unit	7			Unknown	AIG
Jul	W	Nursing home	5	0	07/07/2016	P-P	AIG
Jul	MW	Hospital	11		11/07/2016	P-P	Norovirus
Jul	E	Nursing home			14/07/2016	P-P & AB	Norovirus
Jul	SE	Nursing home	16		14/07/2016	P-P	Norovirus
Jul	SE	Comm. Hosp/Long-stay unit	4		20/07/2016	P-P	AIG
Jul	E	Hospital	7	0		Unknown	Rotavirus
Aug	NW	Nursing home	16	0	27/07/2016	P-P	AIG
Aug	S	Hotel	60	0	29/07/2016	P-P	Norovirus
Aug	MW	Nursing home	2		09/07/2016	Environmental / Fomite	Clostridium difficile
Aug	NE	Nursing home	3			P-P	Clostridium difficile
Sep	W	Other	4	0	30/08/2016	P-P	AIG
Sep	NW	Residential institution	3		04/09/2016	P-P	AIG
Sep	NE	Hospital	5	5		P-P	Clostridium difficile
Sep	MW	Nursing home			12/02/2016	Unknown	Clostridium difficile
Sep	S	Hotel	3	0	11/09/2016	P-P & AB	Norovirus
Sep	MW	Childcare facility			02/09/2016	P-P & FB	VTEC & Campylobacter
Sep	S	Hotel	12	0	17/09/2016	Unknown	AIG
Sep	W	Residential institution	10	0	26/09/2016	P-P	AIG
Sep	NDSC	Community outbreak	12	4	10/08/2016	Unknown	VTEC
Sep	W	Hotel	35		24/06/2016	Not Specified	Norovirus
Sep	NW	Residential institution	4	0	19/09/2016	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 Q3, 2016

Month	HSE area	Location	No. ill *	No. Hosp.	Date Onset	Suspect mode of transmission	Disease
Jul	MW	Private house	1	0	17/06/2016	P-P	VTEC
Jul	MW	Private house	4	0	16/06/2016	P-P	Cryptosporidiosis
Jul	W	Private house	2	0	03/07/2016	P-P	VTEC
Jul	E	Private house	4	0	10/06/2016	Unknown	Giardiasis
Jul	MW	Private house	2		24/06/2016	P-P & WB	VTEC
Jul	NW	Private house			23/05/2016	Not Specified	VTEC
Jul	M	Private house	1		08/07/2016	Animal contact	VTEC
Jul	M	Private house	1			Unknown	VTEC
Jul	MW	Private house	3	1	11/07/2016	Animal contact	Salmonellosis
Jul	SE	Private house	3	1	07/06/2016	P-P	Giardiasis
Jul	MW	Private house	1	0	10/07/2016	P-P & WB	VTEC
Jul	S	Private house	1			P-P	VTEC

Jul	S	Private house	1	1	07/07/2016	P-P	VTEC
Aug	SE	Private house	2		25/07/2016	Unknown	VTEC
Aug	E	Extended family	2	2	13/07/2016	P-P	VTEC
Aug	S	Private house	1	0	02/07/2016	WB	VTEC
Aug	M	Private house	3	0	24/07/2016	Animal contact	VTEC
Aug	S	Not Specified	2		30/07/2016	Not Specified	VTEC
Aug	E	Private house	5	0	25/07/2016	P-P	VTEC
Aug	MW	Private house	3	1	12/07/2016	P-P & WB	VTEC
Aug	SE	Private house	2		12/06/2016	Unknown	Giardiasis
Aug	S	Private house	1	1	28/07/2016	P-P	VTEC
Aug	NW	Private house	2	2		P-P	Rotavirus
Aug	M	Private house	2	1	12/08/2016	Unknown	VTEC
Aug	SE	Extended family	2	0	14/06/2016	WB	VTEC
Aug	E	Private house	2		27/07/2016	Unknown	VTEC
Aug	NE	Private house	2		16/08/2016	P-P	Rotavirus
Aug	MW	Private house			04/07/2016	P-P	VTEC
Aug	W	Private house	2	0		P-P	Campylobacter
Aug	M	Private house	1	0	26/08/2016	Unknown	VTEC
Aug	M	Private house	1	1	16/08/2016	Unknown	VTEC
Sep	E	Private house	2	0	11/08/2016	Unknown	Salmonellosis
Sep	S	Extended family	1		08/08/2016	Not Specified	VTEC
Sep	W	Private house	2	0	26/08/2016	Unknown	Campylobacter
Sep	MW	Private house	2	0	08/08/2016	P-P	Salmonellosis
Sep	NE	Extended family	3		31/08/2016	P-P	VTEC
Sep	MW	Private house	3	2	22/08/2016	P-P & Animal	VTEC
Sep	E	Private house	2		28/08/2016	Environmental / Fomite	VTEC
Sep	M	Private house	1	1	18/08/2016	Unknown	VTEC
Sep	NE	Private house	2		28/08/2016	P-P & FB	Salmonellosis
Sep	M	Private house	1		16/09/2016	Environmental / Fomite	VTEC
Sep	W	Private house	3	0	29/08/2016	P-P	Cryptosporidiosis
Sep	M	Private house	1		18/09/2016	Unknown	VTEC
Sep	M	Private house	1			Unknown	VTEC
Sep	M	Private house	1	0		Unknown	VTEC
Sep	SE	Private house	2	2	16/09/2016	Environmental / Fomite	Cryptosporidiosis
Sep	W	Private house	0			Not Specified	VTEC
Sep	NE	Private house	2		06/09/2016	P-P & WB	VTEC
Sep	E	Travel related	3	0	28/08/2016	Unknown	Cryptosporidiosis
Sep	M	Private house	3	1	26/09/2016	Unknown	VTEC
Sep	M	Private house	2	0	15/09/2016	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 Q3, 2016

Month	HSE area	Type of outbreak	Location	No. ill *	No. Hosp.	Date Onset	Suspect mode of transmission	Organism
Jul	SE	General	Hospital	6	6		Unknown	VRE
Jul	E	Family	Private house	3	0	10/06/2016	P-P	Pertussis
Jul	SE	Family	Private house	2	2	08/07/2016	AB	Pertussis

Month	HSE area	Type of outbreak	Location	No. ill *	No. Hosp.	Date Onset	Suspect mode of transmission	Organism
Aug	E	General	Residential institution	3	1	04/07/2016	P-P	Pertussis
Aug	S	General	Comm. Hosp/Long-stay unit	4	0	25/05/2016	P-P	Scabies
Aug	MW	Family	Private house	2	1	24/06/2016	P-P	Pertussis
Aug	S	General	School	5	1	21/07/2016	P-P	Hepatitis A (acute)
Aug	E	General	Community outbreak	41		03/11/2015	P-P	Lymphogranuloma venereum
Aug	S	General	Hospital	6		16/07/2016	P-P	MRSA
Aug	E	Family	Private house	3	0	29/07/2016	P-P	Pertussis
Aug	E	General	Hospital	10	10		Environmental / Fomite	CRE
Sep	W	General	Hospital	2	0	15/07/2016	P-P	Measles
Sep	E	General	Other	2			P-P & AB	Pertussis
Sep	E	General	Comm. Hosp/Long-stay unit	3	3	03/07/2016	Unknown	VRE
Sep	S	General	Other	4			P-P	Impetigo
Sep	S	Family	Private house	6	1	21/08/2016	P-P	Pertussis
Sep	S	General	Childcare facility	7	0	07/09/2016	P-P	Chickenpox
Sep	S	Family	Travel related	2	2	01/09/2016	P-P & FB	Typhoid
Sep	S	General	Childcare facility	5	0	12/09/2016	P-P	Hand foot and mouth
Sep	E	Family	Travel related	2		18/08/2016	Unknown	Hepatitis A (acute)
Sep	SE	General	Nursing home	6	0	08/09/2016	P-P	Scabies

P-P denotes Person-to-Person transmission, WB denotes waterborne; AB denotes airborne; IDU denotes Injecting Drug Use; NK denotes unknown; CRE denotes Carbapenemresistant 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 2016. There were 23 general and 51 family IID outbreaks reported during this period, resulting in at least 335 people being ill.

Acute infectious gastroenteritis (n=9) was responsible for the most general outbreaks of IID (39%), followed by Norovirus (n=7).

The most common cause of family outbreaks of IID was VTEC (n=36) [71%]. The other diseases responsible for family outbreaks were campylobacteriosis, cryptosporidiosis, giardiasis and salmonellosis. (Table 2).

Fifteen general IID outbreaks were transmitted person-to-person/person-to-person & airborne (65%). Sixteen general IID outbreaks (70%) were reported to have occurred in healthcare settings, i.e. hospitals or residential institutions, during this period.

There were twenty-one non-IID outbreaks reported during Q3 2016 (Table 3). The most common cause of non IID outbreaks was during this period was pertussis (n=7) [33%], five of which were reported to have occurred in private homes.

Table 4 outlines the outbreak rate per HSE-area for outbreaks notified during Q3 2016.

Table 4. Number of Infectious Disease Outbreaks by HSE Area, Q3 2016

HSE Area	No. of outbreaks	Rate per 100,000 population
E	18	1.1
M	13	4.6
MW	14	3.7
NE	6	1.4
NW	5	1.9
SE	18	2.0
S	10	2.7
W	10	2.3
Total	94	**2.1**

NOTIFICATIONS OF INFECTIOUS INTESTINAL, ZOONOTIC AND VECTORBORNE DISEASE

The number of notifications of infectious intestinal, zoonotic and vectorborne disease by HSE-Area for the third quarter of 2016 is shown in Table 5.

Table 5. Infectious intestinal, zoonotic and vectorborne disease notifications Q3, 2016 by HSE-Area

Infectious Intestinal Disease	E	M	MW	NE	NW	SE	S	W	Total
Bacillus cereus foodborne infection/intoxication	0	0	0	0	0	0	0	0	**0**
Botulism	0	0	0	0	0	0	0	0	**0**
Campylobacter infection	241	52	95	54	22	90	113	93	**760**
Cholera	0	0	0	0	0	0	0	0	**0**
Clostridium perfringens (type A) food-borne disease	0	0	0	0	0	0	0	0	**0**
Cryptosporidiosis	17	5	4	4	3	13	12	15	**73**
Giardiasis	15	0	1	1		11	9	7	**44**
Listeriosis	1	0	2	0	0	1	0	0	**4**
Noroviral infection	76	1	16	9	2	3	12	5	**124**
Paratyphoid	~	~	~	~	~	~	~	~	**2**
Rotavirus infection[a1]	103	39	23	26	24	66	60	50	**391**
Salmonellosis	43	12	14	7	6	8	12	8	**110**
Shigellosis	7	0	3	2	0	3	1	5	**21**
Staphylococcal food poisoning	0	0	0	0	0	0	0	0	**0**
Typhoid	~	~	~	~	~	~	~	~	**7**
Verotoxigenic *Escherichia coli* infection[b]	68	20	50	17	11	43	72	37	**318**
Yersiniosis	0	0	0	0	0	0	0	0	**0**
Zoonotic Disease									
Anthrax	0	0	0	0	0	0	0	0	**0**
Brucellosis	0	0	0	0	0	0	0	0	**0**
Echinococcosis	0	0	1	0	0	0	0	0	**1**
Leptospirosis	2	0	2	1	0	0	1	1	**7**
Plague	0	0	0	0	0	0	0	0	**0**
Q Fever	0	0	0	2	0	0	0	1	**3**
Rabies	0	0	0	0	0	0	0	0	**0**
Toxoplasmosis	5	1	0	0	0	0	1	1	**8**
Trichinosis	0	0	0	0	0	0	0	0	**0**
Vectorborne Disease									
Chikungunya disease	0	0	0	0	0	0	1	0	**1**
Dengue	2	0	1	0	0	0	1	0	**4**
Lyme disease (neuroborreliosis)	2	1	2	0	1	0	2	2	**10**
Malaria	19	4	0	8	1	2	7	4	**45**
Typhus	0	0	0	0	0	0	0	0	**0**
West Nile fever [c]	0	0	0	0	0	0	0	0	**0**
Zika Virus Infection	~	~	~	~	~	~	~	~	**11**

[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.

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 2016. Comparison of trends with previous years is shown in Figure 1.

Table 6. Salmonellosis notifications by HSE-Area and month, Q3 2016

Month	E	M	MW	NE	NW	SE	S	W	Total
Jul	11	4	3	0	0	3	5	2	**28**
Aug	17	7	7	2	2	4	3	2	**44**
Sep	15	1	4	5	4	1	4	4	**38**
Total	**43**	**12**	**14**	**7**	**6**	**8**	**12**	**8**	**110**

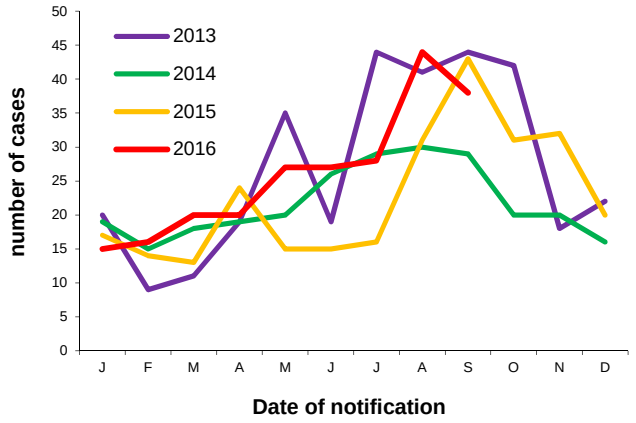

Figure 1. Seasonal distribution of human salmonellosis notifications, 2013 to end Q3 2016

Table 7 shows the serotypes for the *Salmonella* isolates typed by the NSSLRL in the third quarter of 2016 by HSE area (n=114). The commonest human serotypes reported were. *S.* Typhimurium[†] (n=28, 25%) and *S.* Enteritidis (n=39, 34%).

Table 8 shows the serotype distribution of confirmed *Salmonella* notifications by travel status this quarter among salmonellosis notifications on CIDR. 45% (n=50) were travel-associated, 44% (n=48) were indigenous and for 12 cases, the country of infection was unknown/not specified.

Outbreaks of salmonellosis

There were four family outbreaks of salmonellosis notified in Q3 2016 (Tables 1 &2).

[†]includes 13 cases of monophasic *S.*Typhimurium 4,5,12:i:-

Table 7. Serotypes of human *S. enterica* isolates referred to NSSLRL Q3, 2016

Serotype	E	M	MW	NE	NW	SE	S	W	Total
4,[5],12:i:-	2	4	0	0	0	2	0	0	8
Agama	2	0	0	0	0	0	0	0	2
Agona	1	0	2	0	0	0	0	0	3
Anatum	1	0	0	0	0	1	0	0	2
Bareilly	0	0	1		0	0	0	1	2
Coeln	1	0	0	0	0	0	0	0	1
Derby	1	0	0	0	0	0	0	0	1
Durham	0	0	0	0	0	0	0	1	1
Enteritidis	15	3	4	3	4	5	2	3	39
Hadar	0	0	1	0	0	0	1		2
Heidelberg	0	1	0	1	0	0	0	0	2
Infantis	1	0	0	0	0	1	0	0	2
Java	1	0	0	0	0	0	0	0	1
Javiana	1	0	0	0	0	0	0	0	1
Kentucky	0	0	0	0	0	1	0	0	1
Kimuenza	0	0	0	0	0	0	0	1	1
Mikawasima	0	1	0	0	0	0	0	0	1
Montevideo	0	0	0	0	0	0	1	0	1
Newport	1	0	0	0	0	0	0	0	1
Ohio	2	0	0	0	0	0	0	0	2
Paratyphi A	~	~	~	~	~	~	~	~	2
Poona	1	0	0	0	0	0	0	0	1
Saintpaul	1	0	0	0	1	1	0	0	3
Stanley	2	0	0	0	0	0	0	0	2
Stourbridge	1	0	0	0	0	0	0	0	1
Typhi	~	~	~	~	~	~	~	~	6
Typhimurium	4	3	5	1	1	2	2	2	20
Unnamed	1	1	0	0	0	0	1	1	4
Virchow	1	0	0	0	0	0	0	0	1
Total	**42**	**13**	**14**	**5**	**7**	**15**	**8**	**10**	**114**

Data Source: NSSLRL

Table 8. Confirmed *Salmonella* notifications by serotype and travel status, Q3 2016 [n(%)]

Serotype	Indigenous	Travel-associated	Unk/not specified	Total
***S.* Enteritidis**	10 (22%)	26 (50%)	4 (36%)	**40 (37%)**
S.* Typhimurium	18 (39%)	6 (12%)	1 (9%)	**25 (23%)**
Other	15 (33%)	19 (41%)	6 (55%)	**40 (37%)**
***Salmonella* spp**	3 (7%)	1 (2%)	0 (0%)	**4 (4%)**
Total	**46 (100%)**	**52 (100%)**	**11 (100%)**	**109 (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:-

S. Typhi and S. Paratyphi

There were seven cases of typhoid reported to CIDR in Q3 2016 – four associated with travel to Pakistan, India, Nepal and the Philipines, and three with country of infection unknown/not specified. There were two cases of paratyphoid notified this quarter, both associated with travel to Pakistan.

Outbreaks of S. Typhi and S. Paratyphi

There was one family outbreak of typhoid notified in Q3 2016.

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.

Three hundred and eighteen cases of VTEC were notified this quarter, the regional distribution of which is shown in Table 9. This compares with 251 VTEC cases notified in Q3 2015 and 242 in Q3 2014 (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 2016.

Table 9. Number VTEC notified by case classification and HSE-area, Q3 2016

Case classification	E	M	MW	NE	NW	SE	S	W	Total
Confirmed	68	18	39	16	10	43	60	35	289
Probable	0	2	11	1	1	0	12	2	29
Possible	0	0	0	0	0	0	0	0	0
Total	68	20	50	17	11	43	72	37	318

Table 10. VTEC notified by serogroup and month, Q3 2016

Month	O157	O26	Other	Total
Jul	27	33	51	**111**
Aug	23	35	46	**104**
Sep	32	22	49	**103**
Total	**82**	**90**	**146**	**318**

Fourteen VTEC cases notified this quarter were reported as having developed HUS –five O26, four O157, two O145, one O182, one O103, and one infection confirmed only by PCR (no serogroup).

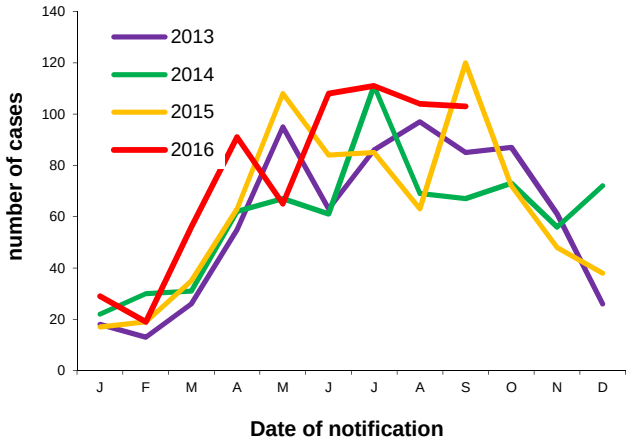

Figure 2. Seasonal distribution of VTEC cases notified 2013 to end Q3 2016

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 2016.

Table 11. Verotoxin typing profiles of *E. coli* referred to the HSE DML Public Health Laboratory, Cherry Orchard Hospital in Q3 2016

Serogroup	*vt1*	*vt2*	*vt1+vt2*	Not spec.	Total
O157	0	37	44	1	**82**
O26	23	5	61	1	**90**
Other	46	66	24	10	**146**
Total	**69**	**108**	**129**	**12**	**318**

Data Source: PHL Cherry Orchard

Outbreaks of VTEC infection

During this quarter, two general and thirty-six 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 second quarter of 2016 are shown in Table 12. There were 760 cases of campylobacteriosis notified in Q3 2016 compared to 766 in the same period in 2015 and 767 in Q3 2014 (Figure 3).

Table 12. *Campylobacter* notifications by HSE-Area and month, Q3 2016

Month	E	M	MW	NE	NW	SE	S	W	Total
Jul	81	17	17	12	10	30	47	32	**246**
Aug	84	20	25	19	11	30	36	41	**266**
Sep	76	15	53	23	1	30	30	20	**248**
Total	**241**	**52**	**95**	**54**	**22**	**90**	**113**	**93**	**760**

Outbreaks of *Campylobacter* infection

There was one general outbreak caused by VTEC & campylobacter and two family outbreaks of campylobacteriosis reported in Q3 2016 (Tables 1 and 2).

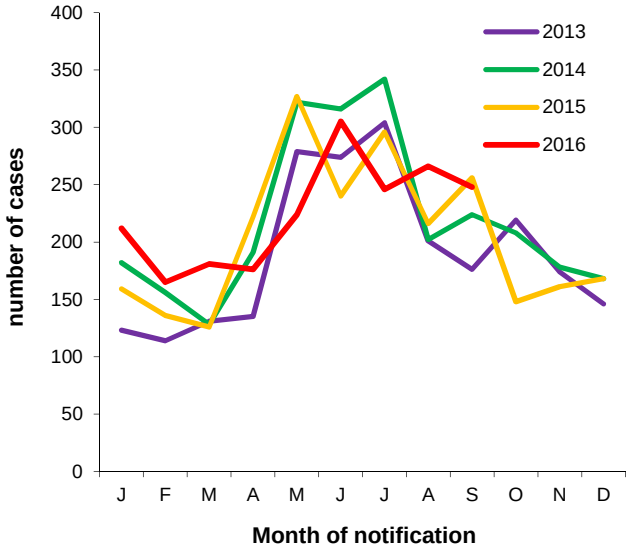

Figure 3. Seasonal distribution of *Campylobacter* notifications 2013 to end Q3 2016

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 2016, 73 cases of cryptosporidiosis were notified (Table 13), compared to 108 in the same period in 2015 and 63 in Q3 2014 (Figure 4).

Table 13. Cryptosporidiosis notifications by HSE-Area and month, Q3 2016

Month	E	M	MW	NE	NW	SE	S	W	Total
Jul	2	0	2	0	0	4	3	4	**15**
Aug	5	3	2	3	1	3	6	4	**27**
Sep	10	2	0	1	2	6	3	7	**31**
Total	**17**	**5**	**4**	**4**	**3**	**13**	**12**	**15**	**73**

Outbreaks of cryptosporidiosis

There were four family outbreaks of cryptosporidiosis reported in quarter 3 2016. (Tables 1 and 2).

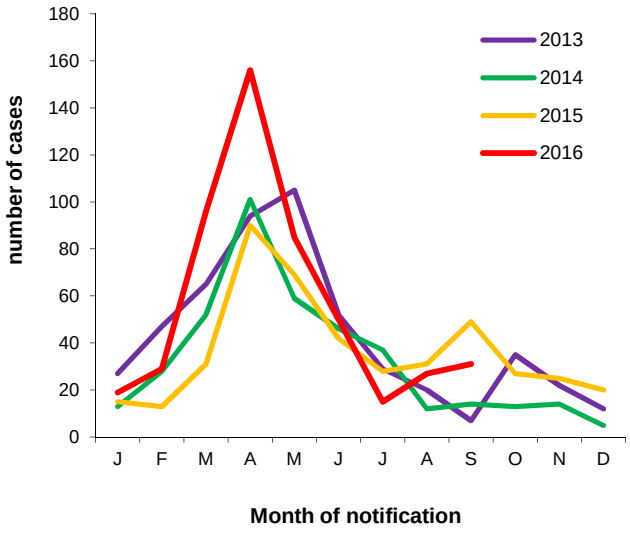

Figure 4. Seasonal distribution of cryptosporidiosis notifications 2013 to end Q3 2016

NOROVIRUS

Human noroviral infection became a notifiable disease on January 1st 2004. Since March 2013, norovirus 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 124 cases notified in the third quarter of 2016 (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 2016

Month	E	M	MW	NE	NW	SE	S	W	Total
Jul	30	0	9	3	1	2	8	1	**54**
Aug	23	0	2	4	1	1	1	0	**32**
Sep	23	1	5	2	0	0	3	4	**38**
Total	**76**	**1**	**16**	**9**	**2**	**3**	**12**	**5**	**124**

Norovirus outbreaks

Norovirus or suspect viral aetiology is the commonest cause of outbreaks of acute gastroenteritis in Ireland. In the third quarter of 2016, there were sixteen outbreaks confirmed as being caused by this virus, involving at least 198 people becoming ill, as outlined in tables 1 & 2. The seasonal trend is outlined in figure 5.

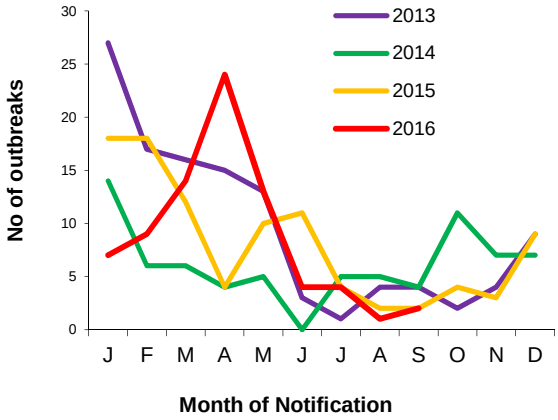

Figure 5. Seasonal distribution of confirmed norovirus outbreaks, 2013 to end Q3 2016

SHIGELLA

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

During Q3 2016, twenty-one cases of shigellosis were notified (Table 5). This compares with twenty-seven cases notified in Q3 2015 and nineteen in Q3 2014.

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

Table 15: Species and serotype distribution of Q3 2016 human *Shigella* isolates referred to the NSSLRL.

Serotype	Number of isolates
Shigella sonnei	13
Shigella flexneri 2a	4
Shigella boydii	1
Shigella flexneri 3a	1
Shigella flexneri 4c	1
Shigella flexneri 6	1
Total	**21**

Data Source: NSSLRL

Outbreaks of shigellosis

There were no outbreaks of shigellosis notified in Q3 2016 (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, 2016, forty-four cases of giardiasis were notified (Table 5); this compares with 50 cases notified in Q3 2015 and 21 in Q3 2014.

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

Outbreaks of giardiasis

There were three family outbreaks of giardiasis notified in Q3 2016 (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 three adult and one neonatal case of listeriosis notified in Q3 2016, compared to two cases in quarter 3 2015 and six in quarter 3 2014.

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

Table 16: Serotypes of Q3 2016 human *Listeria* isolates referred to the NSSLRL

Serotype	Number of isolates
1/2a	2
4b	1
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 2016 are shown in Table 17 and Figure 6.

Table 17. Rotavirus infection by HSE-Area and month, Q3 2016

Month	E	M	MW	NE	NW	SE	S	W	Total
Jul	50	18	5	5	10	25	32	19	**164**
Aug	37	15	12	13	10	23	16	18	**144**
Sep	16	6	6	8	4	18	12	13	**83**
Total	**103**	**39**	**23**	**26**	**24**	**66**	**60**	**50**	**391**

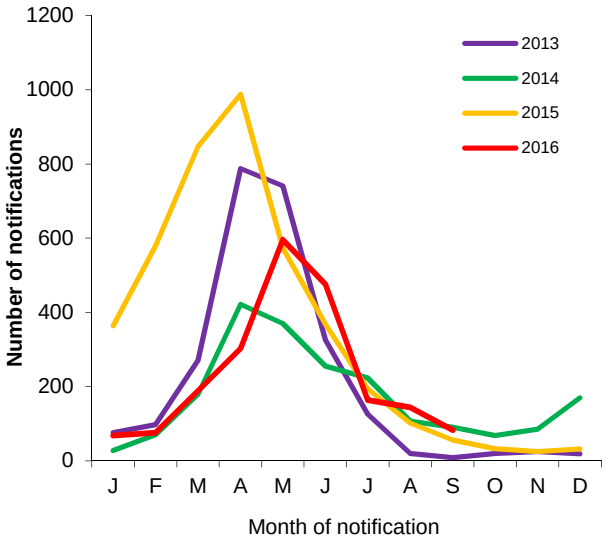

Figure 6. Seasonal distribution of rotavirus notifications, 2013 to end Q3 2016

Outbreaks of rotavirus

There were two family outbreaks and one general outbreak of rotavirus notified this quarter (Table 2).

FOODBORNE INTOXICATIONS

Bacillus cereus foodborne infection/intoxication, botulism, *Clostridium perfringens* (type A) food-borne disease and staphylococcal food poisoning became notifiable diseases on January 1st 2004. Prior to this, these diseases were notified under the category of 'Food Poisoning (bacterial other than Salmonella)'.

There were no cases of foodborne infection/intoxication notified this quarter.

NON-IID ZOONOTIC DISEASES

Non-IID zoonoses now notifiable include: anthrax, brucellosis, echinococcosis, leptospirosis, plague, Q fever, toxoplasmosis, trichinosis and rabies. The Q3 2016 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 five cases notified in the same period in 2015 and four cases in Q3 2014.

There were seven cases of leptospirosis notified in Q3 2016. This compares with seven cases in Q3 2015 and seven in Q3 2014.

Three cases were reported to have acquired their infection through animal contact occupationally, one as a result of recreational leisure water contact abroad and the source of infection was unknown for the three remaining cases.

There was one case of echinococcosis notified in Q3 2016.

There were no cases of brucellosis, or trichinosis notified this quarter.

There were three cases of Q Fever notified in Q3 2016, compared to one in Q3 2015 and none in Q3 2014.

MALARIA

Malaria has been a notifiable disease for many years. The Q3 2016 notifications are reported in Table 5 by HSE-Area.

Forty-five cases of malaria were notified in Q3 2016. This compares with thirty cases reported in Q3 2015 and thirty-eight in Q3 2014.

Thirty-six cases were reported as *P. falciparum*, four as *P. vivax*, two as *P. ovale* and one as *P. malariae.* The organism was not known/not specified for the remaining two cases.

Sixteen cases were exposed in Sub-Saharan Africa and country of infection is unknown/not specified for the remaining twenty-nine cases this quarter.

The reason for travel for thirteen cases was reported as 'visiting family in country of origin', four cited 'business or professional travel' and one case was in an Irish citizen living abroad. One case was reported in a new entrant to Ireland and one case was reported as a result of a foreign visitor becoming ill whilst in Ireland.

The reason for travel was not specified/unknown for the remaining twenty-five 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 2016 notifications are reported in Table 5 by HSE-Area.

There were ten cases of Lyme disease (neuroborreliosis) reported in Q3 2016.

There were four cases of Dengue fever reported this quarter. One cases was associated with travel to Africa, one with travel to SE Asia while country of infection was unknown/not specified for the remaining two cases.

There was one case of Chikungunya disease reported in Q3 2016, associated with travel to East Africa.

There were no notifications of West Nile fever this quarter.

Zika virus infection is a notifiable disease in Ireland under the Infectious Diseases (Amendment) Regulations 2016 (S.I. No. 276 of 2016). All medical practitioners and laboratories are required to notify cases of Zika virus infection to the Medical Officer of Health.

Elven cases of Zika virus infection were notified during Q3 2016, all associated with travel to affected areas.

A full suite of guidance for health care professionals and the general public, including travel advice, is available at www.hpsc.ie

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