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

Quarter 2 –2014 **September 2014**

This is the second 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 2, 2014

Month	HSE area	Location	No. ill *	No. Hosp.	Date Onset	Suspect mode of transmission	Disease
Apr	NW	Comm. Hosp/Long-stay unit	3	0	31/03/2014	P-P	AIG
Apr	W	Creche	5	0	31/03/2014	P-P	AIG
Apr	W	Community outbreak	2	0	23/02/2014	Unknown	Salmonella
Apr	E	Creche	13	0	25/03/2014	P-P	AIG
Apr	NW	Nursing home	9	-	06/04/2014	P-P	Norovirus
Apr	E	Other	4	0	07/03/2014	Unknown	AIG
Apr	W	Residential institution	4	-	03/04/2014	P-P	AIG
Apr	SE	Comm. Hosp/Long-stay unit	15	-	03/04/2014	P-P	Norovirus
Apr	M	Creche	3	0	25/03/2014	P-P	Cryptosporidium
Apr	W	Creche	9	0	24/03/2014	P-P	VTEC
Apr	NW	Hospital	10	9	20/04/2014	P-P	Norovirus
Apr	SE	Creche	14	0	15/03/2014	P-P	Rotavirus
Apr	NW	Comm. Hosp/Long-stay unit	-	-	-	P-P	AIG
Apr	E	Residential institution	20	0	24/04/2014	P-P	Norovirus
May	E	Residential institution	5	0	23/04/2014	P-P	AIG
May	NW	Hospital	-	-	01/05/2014	P-P	Norovirus
May	E	Hospital	6	6	09/02/2014	Unknown	Clostridium Difficile
May	NW	Residential institution	3	0	10/05/2010	P-P	AIG
May	SE	Creche	14	2	02/05/2014	P-P	Rotavirus
May	SE	Nursing home	23	-	03/05/2014	P-P	Norovirus
May	MW	Restaurant / Cafe	70	0	04/05/2014	WB	AIG
May	NW	Creche	4	0	28/04/2014	P-P	VTEC
May	NW	Residential institution	3	0	16/05/2014	P-P	AIG
May	NW	Residential institution	2	0	16/05/2014	P-P	AIG
May	S	Hotel	4	-	18/05/2014	AB	Norovirus
Jun	S	Nursing home	2	-	-	P-P	Clostridium Difficile
Jun	SE	Nursing home	30	-	02/06/2014	P-P	AIG
Jun	E	Nursing home	9	0	08/06/2014	FB	Campylobacter
Jun	E	Other	5	0	15/06/2014	P-P & FB	AIG
Jun	SE	Nursing home	9	-	08/06/2014	P-P	AIG
Jun	E	Hospital	6	0	19/06/2014	P-P	Rotavirus
Jun	SE	Residential institution	4	-	23/06/2014	P-P	AIG
Jun	E	Hospital	4	-	03/06/2014	P-P	Clostridium Difficile
Jun	S	Other	30	3	23/05/2014	Unknown	Campylobacter

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, 2014

Month	HSE area	Location	No. ill *	No. Hosp.	Date Onset	Suspect mode of transmission	Disease
Apr	MW	Private house	3	1	11/01/2014	P-P	Salmonella
Apr	M	Private house	2		25/03/2014	Environmental / Fomite	VTEC
Apr	W	Private house	1	0	31/03/2014	P-P	VTEC
Apr	NW	Private house	3	3	08/04/2014	Unknown	Cryptosporidium
Apr	S	Private house	3	1	15/04/2014	Unknown	VTEC
Apr	S	Private house	2		26/03/2014	P-P	VTEC
May	W	Private house	1	0	16/04/2014	P-P	VTEC
May	E	Restaurant / Cafe	3	0	22/04/2014	P-P	Norovirus
May	S	Private house	2	0	24/03/2014	P-P & Animal	Cryptosporidium
May	W	Private house	2	0		P-P	Campylobacter
May	E	Private house	2	1	24/04/2014	P-P	VTEC
May	S	Private house			21/04/2014	Animal contact	Cryptosporidium
May	SE	Private house	1	0	30/04/2014	Unknown	VTEC
May	NW	Private house			24/04/2014	P-P	Norovirus
May	S	Private house	4		04/05/2014	P-P	VTEC
May	M	Private house	2		09/05/2014	Environmental / Fomite	VTEC
May	MW	Private house	4		26/04/2014	P-P	VTEC
May	W	Private house	1	0	01/05/2014	P-P	VTEC
May	NW	Private house	2			P-P	Campylobacter
May	M	Private house	2		25/04/2014	Unknown	VTEC
May	SE	Private house	2	1	11/04/2014	Unknown	VTEC
May	W	Private house	3	0	05/05/2014	FB	VTEC
May	W	Private house	2		20/05/2014	Not Specified	Campylobacter
Jun	SE	Private house	2		17/05/2014	Unknown	VTEC
Jun	S	Private house	2	1	01/06/2014	Not Specified	Cryptosporidium
Jun	E	Private house	3	0	01/06/2014	P-P & Animal	VTEC
Jun	M	Private house	1		07/06/2014	Unknown	VTEC
Jun	S	Private house	2	0	01/01/2014	P-P	VTEC
Jun	M	Private house	2		01/06/2014	WB	VTEC
Jun	E	Travel related	2	0	31/05/2014	Unknown	Salmonella
Jun	S	Private house	3	1	22/05/2014	P-P & Animal	VTEC

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

* Total numbers ill does not include asymptomatic cases

Table 3. Non-IID Outbreaks in Quarter 2, 2014

Month	HSE area	Type of outbreak	Location	No. ill *	No. Hosp.	Date Onset	Suspect mode of transmission	Organism
Apr	SE	General	Nursing home	22	0	26/03/2014	P-P & Airborne	Influenza
Apr	NW	Family	Private house	12	4	15/03/2014	P-P	Influenza
Apr	S	General	Nursing home	2	-	-	P-P	Influenza
Apr	E	General	University/College	3	0	01/04/2014	P-P	Mumps
Apr	E	General	School		0	20/03/2014	P-P	Varicella-zoster
Apr	W	Family	Private house	3	0	10/03/2014	P-P	Mumps
Apr	W	Family	Private house	2	2	24/03/2014	P-P	Influenza
Apr	SE	General	Nursing home	25	2	02/04/2014	P-P & Airborne	Influenza
Apr	M	General	Creche	25	0	27/02/2014	P-P	Suspected varicella zoster
Apr	S	General	Nursing home	11	0	-	P-P & Airborne	Influenza
Apr	E	General	Residential institution	-	-	-	P-P	Influenza
Apr	E	General	Residential institution	4	0	04/04/2014	P-P	Influenza
Apr	NW	General	Hospital	7	7		P-P	Influenza
Apr	E	General	Nursing home	16	0	21/04/2014	P-P	Influenza
Apr	NW	Family	Private house	-	-	14/04/2014	P-P	Mumps
May	S	General	Comm. Hosp/Long-stay unit	23	1	24/03/2014	P-P & Airborne	Influenza
May	S	Family	Private house	-	-	08/05/2014	P-P	Mumps
May	MW	Family	Private house	-	-	01/04/2014	P-P	Pertussis
Jun	MW	General	School	3	-	18/05/2014	P-P	Mumps
Jun	MW	General	Hospital	2	-	-	Environmental / Fomite	CRE
Jun	E	General	Nursing home	31	-	05/11/2013	P-P	Suspected scabies
Jun	MW	General	School	3	-	13/05/2014	P-P	Mumps
Jun	E	General	Hospital	6	6	-	Unknown	Mupirocin Resistant Staphylococcus Aureus
Jun	W	General	Community outbreak	15	1	16/06/2014	P-P	Mumps

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 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 2014. There were 34 general and 31 family IID outbreaks reported during this period, resulting in at least 408 people being ill.

Acute infectious gastroenteritis (n=15) was responsible for the most general outbreaks of IID (44%), followed by Norovirus (n=7).

The most common causes of family outbreaks of IID was VTEC (n=20) [65%]. The other diseases responsible for family outbreaks were campylobacteriosis, cryptosporidiosis, norovirus and salmonellosis (Table 2).

Twenty-seven general IID outbreaks were transmitted person-to-person/person-to-person and airborne (79%). Twenty-one general outbreaks (62%) were reported to have occurred in healthcare settings, i.e. hospitals or residential institutions, during this period.

There were eighteen non-IID outbreaks reported during quarter 2 - see table 3.

Table 4 outlines the outbreak rate per HSE-area for outbreaks notified during Q2 2014.

Table 4. Number of Infectious Disease Outbreaks by HSE Area, Q2 2014

HSE Area	No. of outbreaks	Rate per 100,000 population
E	20	1.2
M	7	2.5
MW	7	1.9
NE	0	0.0
NW	15	6.0
SE	12	2.4
S	15	2.3
W	13	3.0
Total	**89**	**2.0**

NOTIFICATIONS OF INFECTIOUS INTESTINAL, ZOONOTIC AND VECTORBORNE DISEASE

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

Table 5. Intestinal Infectious, Zoonotic and Vectorborne Disease Notifications Quarter 2, 2014 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	212	72	84	60	47	111	136	107	**829**
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	6	19	21	20	23	31	50	36	**206**
Giardiasis	9	1	1	0	0	1	4	0	**16**
Listeriosis	1	0	0	2	0	1	0	0	**4**
Noroviral infection	53	8	3	11	10	5	6	6	**102**
Paratyphoid	~	~	~	~	~	~	~	~	**2**
Rotavirus infection[a]	221	79	61	87	72	162	186	179	**1047**
Salmonellosis	24	5	3	7	3	8	7	8	**65**
Shigellosis	5	0	0	1	0	0	0	2	**8**
Staphylococcal food poisoning	0	0	0	0	0	0	0	0	**0**
Typhoid	~	~	~	~	~	~	~	~	**2**
Verotoxigenic *Escherichia coli* infection[b]	26	19	28	8	4	33	22	50	**190**
Yersiniosis	1	0	0	0	0	0	1	1	**3**
Zoonotic Disease									
Anthrax	0	0	0	0	0	0	0	0	**0**
Brucellosis	1	1	0	0	0	0	0	0	**2**
Echinococcosis	0	0	0	0	0	0	0	0	**0**
Leptospirosis	0	1	1	0	2	2	0	0	**6**
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	1	0	0	0	0	2	1	3	**7**
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]	4	0	0	0	0	1	0	0	**5**
Lyme disease (neuroborreliosis) [c]	0	0	3	0	0	0	1	1	**5**
Malaria	3	0	0	1	0	1	8	1	**14**
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]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 ListeriaReference 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 2014. Comparison of trends with previous years is shown in Figure 1.

Table 6. Salmonellosis Notifications by HSE-Area and Month, Q2 2014

Month	E	M	MW	NE	NW	SE	S	W	Total
Apr	4	3	1	2	1	2	2	4	**19**
May	6	2	1	1	0	3	3	4	**20**
Jun	14	0	1	4	2	3	2	0	**26**
Total	**24**	**5**	**3**	**7**	**3**	**8**	**7**	**8**	**65**

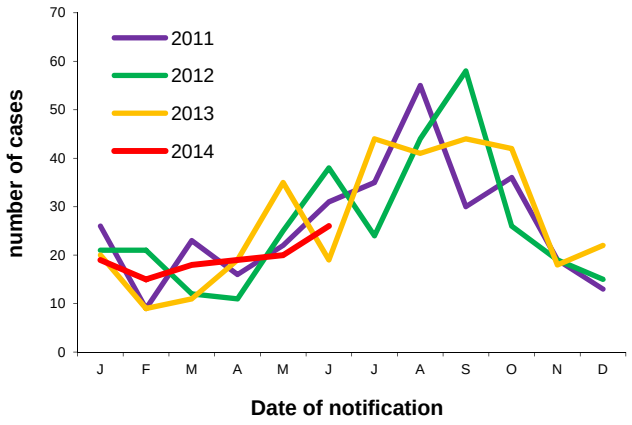

Figure 1. Seasonal Distribution of Human Salmonellosis Notifications, 2011 to end quarter 2 2014

Table 7 shows the serotypes for the *Salmonella* isolates typed by the NSSLRL in the second quarter of 2014 by HSE area (n=69). The commonest human serotypes isolated were *S.*Typhimurium* (n=21, 30%) and *S.* Enteritidis (each n= 12, 17%).

Table 8 shows the serotype distribution of confirmed *Salmonella* notifications by travel status this quarter among salmonellosis notifications on CIDR. 29% (n=19) were travel-associated, 52% (n=34) were indigenous and for 12 cases, the country of infection was unknown/not specified.

Outbreaks of Salmonellosis

There was one general outbreak and two family outbreaks of salmonellosis notified in Q2 2014 (Tables 1 & 2).

Table 7. Serotypes of *S. enterica*Referred to NSSLRL in Quarter 2, 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:-	3	0	0	2	0	2	2	1	**10**
Agona	1	0	0	0	0	0	0	0	**1**
Bareilly	1	0	0	0	0	0	0	0	**1**
Berkeley	0	0	0	0	0	0	0	1	**1**
Bovismorbificans	0	1	0	0	0	0	1	0	**2**
Brandenburg	0	0	0	0	0	0	1	0	**1**
Cerro	1	0	0	0	0	0	0	0	**1**
Dublin	0	0	0	1	0	1	0	0	**2**
Enteritidis	6	0	1	2	1	0	1	1	**12**
Heidelberg	1	0	0	2	0	0	0	0	**3**
Indiana	0	0	0	0	0	1	0	0	**1**
Infantis	1	0	0	0	0	1	0	0	**2**
Isangi	0	0	0	0	0	0	1	0	**1**
Java	3	0	0	0	0	0	0	0	**3**
Kedougou	0	0	0	1	0	0	0	0	**1**
Kentucky	0	1	0	0	0	0	0	0	**1**
Muenchen	0	0	0	0	0	0	1	0	**1**
Newport	1	0	0	0	0	0	0	0	**1**
Paratyphi B	~	~	~	~	~	~	~	~	**1**
Poona	0	0	0	0	0	1	0	0	**1**
Richmond	1	0	0	0	0	0	0	0	**1**
Saintpaul	1	0	0	0	0	0	0	1	**2**
Stanley	2	0	0	0	0	0	0	0	**2**
Typhi	~	~	~	~	~	~	~	~	**2**
Typhimurium	2	3	1	0	1	1	2	1	**11**
Unnamed	1	0	0	0	0	0	0	0	**1**
Wangata	0	0	0	0	0	1	0	0	**1**
Weltevreden	1	0	0	0	0	0	0	1	**2**
Total	**29**	**5**	**2**	**8**	**2**	**8**	**9**	**6**	**69**

Table 8.Confirmed Salmonella notifications by Serotype and Travel Status, Q2 2014 [n(%)]

Serotype	Indigenous	Travel-associated	Unk/not specified	Total
S. Enteritidis	5 (15%)	6 (31%)	0 (0%)	**11 (17%)**
S. Typhimurium	16 (47%)	3 (16%)	1 (8%)	**20 (30%)**
Other	12 (35%)	10 (53%)	9 (75%)	**31 (48%)**
Salmonella spp	1 (3%)	0 (0%)	2 (17%)	**3 (5%)**
Total	**34 (100%)**	**19 (100%)**	**12 (100%)**	**65 (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 Q2 2014, associated with travel to South America and SE Asia. There were two cases of typhoid notified this quarter,associated with travel to Africa and the Indian Sub-Continent. (Table 5).

*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.

One hundred and ninety cases of VTEC were notified this quarter, the regional distribution of which is shown in Table 9. This compares with 210 VTEC cases notified in Q2 2013 and 162 in Q2 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, Q2 2014.

Table 9. Number VTEC notified by case classification and HSE-area, Q2 2014

Case classification	E	M	MW	NE	NW	SE	S	W	Total
Conf	25	16	20	8	4	31	20	40	**164**
Prob	1	3	8	0	0	2	2	10	**26**
Poss	0	0	0	0	0	0	0	0	**0**
Total	**26**	**19**	**28**	**8**	**4**	**33**	**22**	**50**	**190**

Table 10. VTEC notified by serogroup and month, Q2 2014

Month	O157	O26	Other	Total
Apr	4	25	33	**62**
May	11	33	23	**67**
Jun	11	22	28	**61**
Total	**26**	**80**	**84**	**190**

Nine VTEC cases notified this quarter was reported as having developed HUS. Four were infected with *E. coli* O157, four with *E. coli* O26, and one with *E. coli* O111.

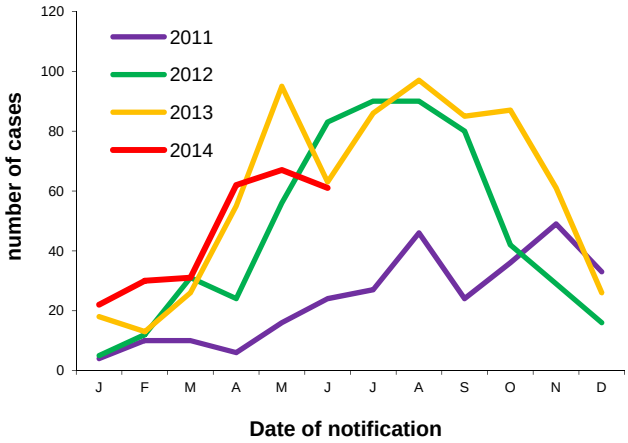

Figure 2. Seasonal distribution of VTEC cases notified 2011 to end quarter 2 2014

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 Q2 2014.

Table 11. Verotoxin typing profiles of *E. coli* referred to the HSE DML Public Health Laboratory, Cherry Orchard Hospital in Q2 2014 (Data are provided courtesy of Dr. Eleanor McNamara and Dr. Anne Carroll).

Serogroup	*vt1*	*vt2*	*vt1+vt2*	Not spec.	Total
O157	0	19	7	-	**26**
O26	39	2	38	1	**80**
Other	34	24	23	2	**83**
Total*	**73**	**45**	**68**	**3**	**189**

*Excludes one notification reported as a probable case based on epidemiological link

Outbreaks of VTEC infection

During this quarter, there were two general and twenty 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 second quarter of 2014 are shown in Table 12. There were 829 notifications this quarter, compared to 688 in the same period last year and 717 in Q2 2012 (Figure 3).

Table 12. *Campylobacter* notifications by HSE-Area and month, Q2 2014

Month	E	M	MW	NE	NW	SE	S	W	Total
Apr	48	18	13	17	8	29	31	27	**191**
May	89	28	40	22	21	34	47	41	**322**
Jun	75	26	31	21	18	48	58	39	**316**
Total	**212**	**72**	**84**	**60**	**47**	**111**	**136**	**107**	**829**

Outbreaks of *Campylobacter* infection

There were two general and three family outbreaks of campylobacteriosis reported in Q2 2014 (Tables 1 and 2).

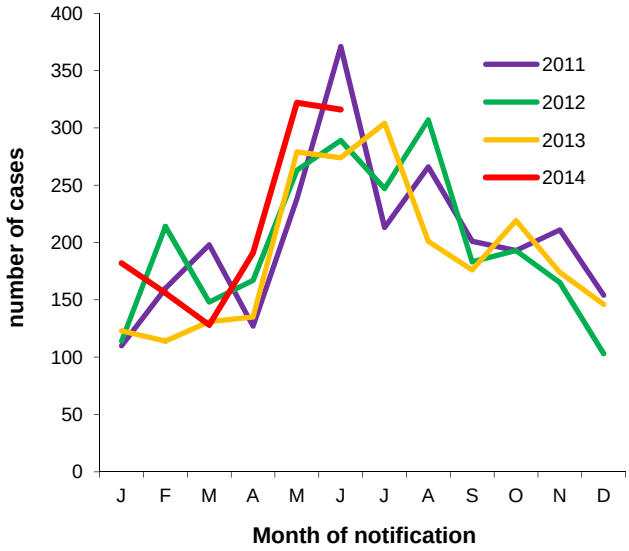

Figure 3. Seasonal distribution of *Campylobacter* notifications 2011 to end quarter 2 2014

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 Q2 2014, 206 cases of cryptosporidiosis were notified (Table 13), compared to 250 in the same period in 2013 and 236 in Q2 2012 (Figure 4).

Table 13. Cryptosporidiosis notifications by HSE-Area and month, Q2 2014

Month	E	M	MW	NE	NW	SE	S	W	Total
Apr	2	12	11	10	10	13	23	20	**101**
May	3	1	4	6	9	9	17	10	**59**
Jun	1	6	6	4	4	9	10	6	**46**
Total	**6**	**19**	**21**	**20**	**23**	**31**	**50**	**36**	**206**

Outbreaks of cryptosporidiosis

There was one general outbreak and four family outbreaks of cryptosporidiosis reported in quarter 2 2014 (Tables 1 and 2).

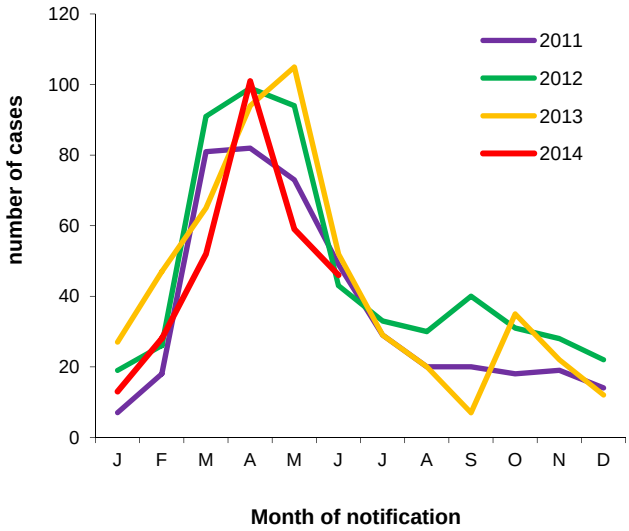

Figure 4. Seasonal distribution of cryptosporidiosis notifications 2011 to end quarter 2 2014

NOROVIRUS

Human noroviral infection became a notifiable disease on January 1st 2004. There were 102 cases notified in the second 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, Q2 2014

Month	E	M	MW	NE	NW	SE	S	W	Total
Apr	21	7	1	7	6	4	5	5	**56**
May	15	1	2	1	4	1	1	0	**25**
Jun	17	0	0	3	0	0	0	1	**21**
Total	**53**	**8**	**3**	**11**	**10**	**5**	**6**	**6**	**102**

Norovirus outbreaks

Norovirus or suspect viral aetiology is the commonest cause of outbreaks of acute gastroenteritis in Ireland. In the second quarter of 2014, there were 9 outbreaks confirmed as being caused by this virus, involving at least 84 people becoming ill, as outlined in tables 1 & 2. The seasonal trend is outlined in figure 5.

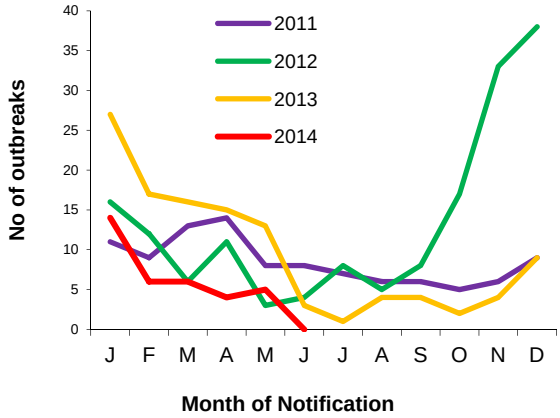

Figure 5. Seasonal distribution of confirmed norovirus outbreaks, 2011 to end quarter 2 2014

SHIGELLA

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

During Q2 2014, eight cases of shigellosis were notified (table 5). This compares with seven cases notified in Q2 2013 and two in Q2 2012.

Three cases were travel related (associated with travel to Pakistan, Nigeria and United Kingdom), Ireland was reported as country of infection for two cases and country of infection was reported as unknown/not specified for the remaining three cases.

Outbreaks of shigellosis

There were no outbreaks of shigellosis notified in Q2 2014 (table 2).

Table 15: Species and serotype distribution of Q2 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
Shigella sonnei	**4**
Shigella flexneri 1b	**1**
Shigella flexneri X variant	**1**
Shigella sp.	**2**
Total	**8**

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 2014, sixteen cases of giardiasis were notified (table 5); this compares with 6 cases notified in Q2 2013 and 15 in Q2 2012.

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

Outbreaks of giardiasis

There were no outbreaks of giardiasis notified in Q2 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 four cases (one adult, two pregnancy-related, and one neonatal) of listeriosis notified in Q2 2014, compared to one cases in quarter 2 2013 and one in quarter 2 2012. One isolate was referred for typing to NSSLRL this quarter (Table 16).

Table 16: Serotypes of Q2 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
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 2014 are shown in Table 17. The number of notifications is considerably fewer than in quarter two in previous years (Figure 6).

Table 17. Rotavirus infection by HSE-Area and month, Q2 2014

Month	E	M	MW	NE	NW	SE	S	W	Total
Apr	104	33	22	32	20	74	81	56	**422**
May	70	37	23	38	25	41	59	77	**370**
Jun	47	9	16	17	27	47	46	46	**255**
Total	**221**	**79**	**61**	**87**	**72**	**162**	**186**	**179**	**1047**

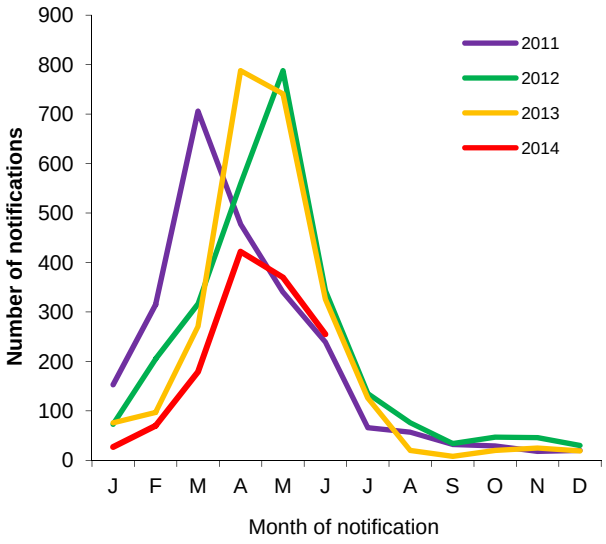

Figure 6. Seasonal distribution of rotavirus notifications, 2011 to end quarter 2 2014

Outbreaks of rotavirus

There were three general outbreaks of rotavirus notified this quarter (Table 1).

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 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 Q2 2014 notifications of these zoonotic diseases are reported by HSE-Area in Table 5.

Seven cases of toxoplasmosis were notified in this quarter. This compares with eight cases notified in the same period in 2013 and four cases in Q2 2012.

There were six cases of leptospirosis notified in Q2 2014; this compares with one in Q2 2013 and one in Q2 2012. Five cases in Q2 2014 were reported to have acquired their illness through occupational exposure, while the source of exposure for the remaining case is uknown.

There were two cases of brucellosis; both were adults.

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

MALARIA

Malaria is a notifiable disease for many years. The Q2 2014 notifications are reported in table 5 by HSE-Area.

Fourteen cases of malaria were notified in Q2 2014. This compares with nine cases reported in Q2 2013 and eleven in Q2 2012.

Ten cases were reported as *P. falciparum*, one as *P. vivax*, one as *P. ovale* and one as *P. malariae*. The organism was not specified for the remaining case.

Eleven cases were exposed in Africa and one in India. The country of infection is unknown/not specified for the remaining two cases.

The reason for travel for nine cases was reported as 'visiting family in country of origin', one case reported holiday travel and one case reported business/professional travel. The reason for travel was not specified/unknown for the remaining three cases.

OTHER NOTIFIABLE VECTORBORNE DISEASES

Under Infectious Diseases (Amendment) Regulations 2011 (S.I. No. 452 of 2011) (Sept 2011), Chikungunya disease, Dengue, Lyme disease (neuroborreliosis) and West Nile fever were made notifiable. The Q2 2014 notifications are reported in Table 5 by HSE-Area.

There were five cases of Lyme disease (neuroborreliosis) and five cases of Dengue fever reported in Q2 2014.

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

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