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 1 –2014 **July 2014**

This is the first 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 1, 2014

Month	HSE area	Location	No. ill *	No. Hosp.	Date Onset	Suspect mode of transmission	Disease
Jan	NE	Residential institution	14	2	-	P-P & AB	Noroviral infection
Jan	S	Comm. Hosp/Long-stay unit	5	0	03/12/2013	P-P & AB	AIG
Jan	NW	Comm. Hosp/Long-stay unit	4	0	02/01/2013	P-P	AIG
Jan	E	Nursing home	9	0	-	Unknown	Campylobacteriosis
Jan	M	Residential institution	9	0	-	P-P & AB	AIG
Jan	SE	Residential institution	14	-	03/01/2014	P-P	AIG
Jan	NW	Comm. Hosp/Long-stay unit	16	0	27/12/2013	Airborne	AIG
Jan	E	Residential institution	12	-	02/01/2014	P-P	AIG
Jan	NW	Comm. Hosp/Long-stay unit	8	-	05/01/2013	P-P	AIG
Jan	E	Hospital	29	24	28/12/2013	P-P	Noroviral infection
Jan	W	Nursing home	16	0	06/01/2014	P-P	Noroviral infection
Jan	E	Nursing home	29	0	-	P-P	Noroviral infection
Jan	MW	Residential institution	11	2	-	P-P	Noroviral infection
Jan	S	Residential institution	2	2	18/12/2013	Unknown	Clostridium difficile
Jan	SE	Residential institution	35	0	10/01/2014	P-P	Noroviral infection
Jan	W	Nursing home	24	0	-	P-P	Noroviral infection
Jan	M	Nursing home	13	0	-	P-P & AB	Noroviral infection
Jan	S	Residential institution	5	0	09/01/2014	P-P & AB	AIG
Jan	E	Nursing home	5	-	16/01/2014	P-P	AIG
Jan	S	Comm. Hosp/Long-stay unit	23	0	13/01/2014	P-P & AB	Noroviral infection
Jan	NE	Other	2	1	-	P-P & AB	Noroviral infection
Jan	E	Nursing home	-	-	13/01/2014	P-P	AIG
Jan	E	Nursing home	7	-	16/01/2014	P-P	AIG
Jan	E	Nursing home	22	0	13/01/2014	P-P	Noroviral infection
Jan	S	Comm. Hosp/Long-stay unit	8	0	18/01/2014	P-P & AB	AIG
Jan	S	Hotel	50	0	20/01/2014	Not Specified	Noroviral infection
Jan	SE	Hospital	43	-	12/01/2014	P-P	Noroviral infection
Jan	M	Nursing home	8	0		P-P & AB	Noroviral infection
Jan	SE	Other	28		16/01/2014	P-P	AIG
Jan	S	Creche	4	0	11/11/2013	Unknown	Cryptosporidiosis
Jan	E	School	55	0	20/01/2014	P-P	AIG
Jan	SE	Residential institution	5		30/01/2014	P-P	AIG
Feb	M	Hospital	2			Airborne	Noroviral infection
Feb	S	Comm. Hosp/Long-stay unit	5	0		P-P	AIG
Feb	E	Other	5	0	27/01/2014	P-P & WB	Cryptosporidiosis
Feb	W	Hospital	10	10		P-P	Noroviral infection
Feb	SE	Residential institution	17		17/01/2014	P-P	AIG
Feb	SE	Hospital	29		02/12/2013	P-P	Noroviral infection
Feb	NW	Comm. Hosp/Long-stay unit	13	0	14/02/2014	P-P & AB	Noroviral infection
Feb	E	Hospital	4	4	08/01/2014	Unknown	Clostridium difficile
Feb	M	Hospital	10		11/02/2014	P-P & AB	AIG
Feb	W	Nursing home	11	0	14/02/2014	P-P	AIG
Feb	E	Creche	7	0	11/02/2014	P-P & AB	AIG
Feb	E	Nursing home	13	2	14/02/2014	P-P	AIG
Feb	S	Hospital				P-P & AB	Noroviral infection

Month	HSE area	Location	No. ill *	No. Hosp.	Date Onset	Suspect mode of transmission	Disease
Feb	SE	Nursing home	37		22/02/2014	P-P	Noroviral infection
Mar	M	Nursing home				P-P & AB	Noroviral infection
Mar	E	Travel related	1	0	02/02/2014	WB	Salmonella Typhi
Mar	E	Nursing home	12	0	02/03/2014	P-P	AIG
Mar	SE	Hospital	5	4	02/03/2014	P-P & AB	Noroviral infection
Mar	W	Hospital	5			P-P	AIG
Mar	E	Other	4	0	07/03/2014	Unknown	AIG
Mar	E	Hospital	16	16	04/03/2014	Unknown	Noroviral infection
Mar	M	Nursing home	23	1		P-P & AB	Noroviral infection
Mar	E	Comm. Hosp/Long-stay unit	9		13/03/2014	P-P	Noroviral infection
Mar	M	Nursing home	36	0	19/03/2014	P-P & AB	Noroviral infection
Mar	W	Hotel	10	1	22/03/2014	Unknown	AIG

P-P denotes Person-to-Person transmission, FB denotes foodborne, WB denotes waterborne; AB denotes airborne; AIG denotes Acute Infectious Gastroenteritis (unspecified); VTEC denotes infection with Verotoxigenic *E. coli;* NK=unknown
* Total numbers ill does not include asymptomatic cases

Table 2. Family Outbreaks of Infectious Intestinal Disease (IID) in Quarter 1, 2014

Month	HSE area	Location	No. ill *	No. Hosp.	Date Onset	Suspect mode of transmission	Disease
Jan	W	Private house	2	0	-	P-P	Campylobacteriosis
Jan	W	Private house	4	1	16/12/2013	P-P	Salmonellosis
Jan	W	Private house	2	0	12/01/2014	P-P	Rotavirus
Feb	MW	Private house	3	0	26/01/2014	P-P and Animal	VTEC
Feb	M	Private house	-	-	09/02/2014	Animal contact	Cryptosporidiosis
Feb	SE	Private house	2	1	05/02/2014	P-P	VTEC
Feb	NW	Private house	2	1	15/02/2014	P-P	Cryptosporidiosis
Mar	M	Private house	-	-	09/02/2014	Environmental / Fomite	VTEC
Mar	M	Private house	-	-	17/02/2014	Unknown	VTEC
Mar	E	Not Specified	-	-	24/02/2014	Unknown	VTEC
Mar	MW	Private house	1	-	06/02/2014	Not Specified	VTEC
Mar	SE	Private house	2	0	01/03/2014	Unknown	Cryptosporidiosis
Mar	SE	Extended family	2	1	07/03/2013	P-P	VTEC
Mar	MW	Private house	1	1	17/03/2014	P-P	VTEC
Mar	M	Private house	2	0	-	P-P and Animal	Giardiasis

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 1, 2014

Month	HSE area	Type of outbreak	Location	No. ill *	No. Hosp.	Date Onset	Suspect mode of transmission	Organism
Jan	S	General	Public house	4	-	01/11/2012	P-P	Tuberculosis
Jan	E	General	Nursing home	39	9	01/01/2014	P-P & AB	Influenza
Jan	S	General	Comm. Hosp/Long-stay unit	4	0	05/12/2013	Airborne	Respiratory Illness
Jan	S	General	Comm. Hosp/Long-stay unit	5	0	12/12/2013	Airborne	Respiratory Illness
Jan	S	General	Comm. Hosp/Long-stay unit	3	-	19/12/2013	Unknown	MRSA
Jan	E	General	Workplace	2	0	14/12/2013	P-P & AB	Measles
Jan	S	General	Comm. Hosp/Long-stay unit	2	0	26/12/2013	Airborne	Respiratory Illness
Jan	S	General	Comm. Hosp/Long-stay unit	9	0	27/12/2013	Airborne	Respiratory illness
Jan	E	General	Not Specified	98	94	08/01/2010	P-P	Influenza
Jan	S	General	Community outbreak	2	-	02/12/2013	Unknown	Hepatitis A
Jan	NE	General	Nursing home	32	9	11/01/2014	P-P & AB	Influenza
Jan	NE	General	Nursing home	10	-	17/01/2014	P-P & AB	Influenza
Jan	S	General	Comm. Hosp/Long-stay unit	3	0	19/01/2014	Airborne	Respiratory illness
Jan	NW	General	School	118	0	20/12/2013	P-P & AB	Influenza
Jan	S	General	Comm. Hosp/Long-stay unit	6	0	20/01/2014	Airborne	Respiratory Syncytial Virus
Jan	E	General	Nursing home	15	4	14/01/2014	P-P	Respiratory Syncytial Virus
Jan	E	General	Nursing home	15	0	05/01/2014	P-P	Influenza
Jan	E	General	Comm. Hosp/Long-stay unit	19	1	05/01/2014	P-P	Human Metapneumovirus
Jan	E	General	Comm. Hosp/Long-stay unit	8	1	19/01/2014	P-P	Influenza
Jan	NE	General	Nursing home	17	-	26/01/2014	P-P	Influenza
Jan	MW	General	Comm. Hosp/Long-stay unit	7	7	11/01/2014	P-P	Influenza
Jan	W	Family	Private house	2	0	28/01/2014	P-P	Mumps
Jan	W	Family	Private house	2	0	07/01/2014	P-P	Mumps
Feb	E	General	Travel related	2	-	-	Vectorborne	Dengue Fever
Feb	S	General	Nursing home	9	2	03/02/2014	P-P & AB	Human Metapneumovirus
Feb	E	General	Residential institution	11	3	31/01/2014	P-P	Influenza
Feb	W	General	Nursing home	10	1	08/02/2014	P-P	Respiratory illness
Feb	E	General	Nursing home	33	3	09/02/2014	P-P	Influenza
Feb	E	General	Community outbreak	-	-	30/12/2013	P-P	Hepatitis B
Feb	E	General	Nursing home	24	-	10/02/2014	P-P	RSV & Influenza
Feb	NE	General	Creche	2	2	09/02/2014	P-P	Meningitis
Feb	SE	General	Comm. Hosp/Long-stay unit	11	0	02/02/2014	Airborne	Influenza
Feb	S	General	Hospital	10	10	-	P-P & AB	Influenza
Feb	S	General	Comm. Hosp/Long-stay unit	18	4	12/02/2014	P-P	Influenza
Feb	M	General	Comm. Hosp/Long-stay unit	8	0	-	P-P	Acute respiratory illness
Feb	E	General	Nursing home	21	1	13/02/2014	P-P	Influenza
Feb	NE	General	Nursing home	18	3	12/02/2014	P-P	Influenza
Feb	NW	Family	Private house	4	2	11/02/2014	P-P	Influenza

Month	HSE area	Type of outbreak	Location	No. ill *	No. Hosp.	Date Onset	Suspect mode of transmission	Organism
Feb	NW	General	Nursing home	5	4	15/02/2014	P-P	Influenza
Feb	E	General	Comm. Hosp/Long-stay unit	23	3	23/01/2014	P-P	Influenza
Feb	E	General	Comm. Hosp/Long-stay unit	14	-	19/02/2014	P-P	Influenza
Feb	NW	Family	Private house	2	1	14/02/2014	P-P	Influenza
Feb	SE	General	Nursing home	21	4	28/01/2014	P-P	Influenza
Feb	SE	General	Comm. Hosp/Long-stay unit	34	0	20/02/2014	P-P	Influenza
Mar	M	General	Hospital	-	-	06/02/2014	P-P	Influenza
Mar	E	General	Nursing home	14	1	26/01/2014	P-P	Influenza
Mar	E	General	Comm. Hosp/Long-stay unit	18	0	-	P-P	Influenza-like illness
Mar	E	General	Nursing home	29	1	26/01/2014	P-P	Influenza
Mar	S	General	Comm. Hosp/Long-stay unit	15	0	28/02/2014	Airborne	Influenza
Mar	E	General	Comm. Hosp/Long-stay unit	7	0	03/02/2014	P-P	Respiratory Syncytial Virus
Mar	MW	General	Comm. Hosp/Long-stay unit	10	10	28/02/2014	P-P	Influenza
Mar	SE	General	Comm. Hosp/Long-stay unit	7	2	25/02/2014	P-P & AB	Influenza
Mar	MW	General	Residential institution	18	-	10/02/2014	P-P & AB	Influenza
Mar	NW	General	Nursing home	17	0	03/03/2014	P-P	Respiratory illness
Mar	SE	General	University/College	2	0	17/02/2013	P-P & AB	Mumps
Mar	NE	General	Residential institution	8	0	27/02/2014	P-P & AB	Influenza
Mar	E	General	Comm. Hosp/Long-stay unit	25	0	28/02/2014	P-P	Influenza
Mar	E	General	Other	3	1	-	P-P	Influenza
Mar	E	Family	Private house	2	1	19/02/2014	P-P	Measles
Mar	NE	General	Residential institution	5	0	28/02/2014	P-P & AB	Influenza
Mar	W	General	Nursing home	6	0	07/03/2014	P-P	Influenza
Mar	W	General	Nursing home	12	1	-	P-P	Influenza
Mar	E	General	Nursing home	27	0	24/02/2014	P-P	Influenza
Mar	MW	General	Comm. Hosp/Long-stay unit	6	6	03/03/2014	P-P	Influenza
Mar	E	General	Hospital	20	0	08/03/2014	P-P	Influenza
Mar	W	General	Nursing home	2	2	-	P-P	Acute respiratory illness
Mar	E	General	Residential institution	12	1	08/03/2014	P-P	Influenza
Mar	MW	General	University/College	10	0	05/02/2014	P-P & AB	Mumps
Mar	S	General	Comm. Hosp/Long-stay unit	11	0	-	P-P	Influenza
Mar	S	General	Comm. Hosp/Long-stay unit	4	0	-	P-P	Influenza
Mar	S	General	Nursing home	16	3	-	P-P	Influenza
Mar	E	General	Nursing home	19		13/03/2014	P-P	Influenza
Mar	SE	General	Nursing home	34	3	12/03/2014	P-P & AB	Influenza
Mar	M	General	Comm. Hosp/Long-stay unit	10	0	17/03/2014	P-P & AB	Influenza
Mar	W	General	Nursing home	22	1	14/03/2014	P-P	Influenza
Mar	NW	General	Comm. Hosp/Long-stay unit	6	0	-	P-P	Influenza

Month	HSE area	Type of outbreak	Location	No. ill *	No. Hosp.	Date Onset	Suspect mode of transmission	Organism
Mar	E	General	Comm. Hosp/Long-stay unit	14	1	17/03/2014	P-P	Influenza
Mar	E	General	Nursing home			10/03/2014	P-P	Influenza
Mar	E	General	Nursing home	35	2	18/02/2014	P-P	Influenza
Mar	E	General	Comm. Hosp/Long-stay unit	34	0	02/03/2014	P-P	Influenza
Mar	W	General	University/College	14	1	16/03/2013	P-P	Measles

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 first quarter of 2014. There were 57 general and 15 family IID outbreaks reported during this period, resulting in at least 822 people being ill.

Norovirus (n=26) was responsible for the most general outbreaks of IID (46%), followed by Acute infectious gastroenteritis (n=25).

The most common causes of family outbreaks of IID was VTEC (n=8) [53%]. The other diseases responsible for family outbreaks were campylobacteriosis, cryptosporidiosis, giardiasis, rotavirus and salmonellosis.(Table 2).

Forty-five general IID outbreaks were transmitted person-to-person/person-to-person and airborne (79%). Forty-seven general outbreaks (82%) were reported to have occurred in healthcare settings, i.e. hospitals or residential institutions, during this period.

There were eighty-one non-IID outbreaks reported during quarter 1 - see table 3.

Table 4 outlines the outbreak rate per HSE-area for outbreaks notified during Q1 2014.

Table 4. Number of Infectious Disease Outbreaks by HSE Area, Q1 2014

HSE Area	No. of outbreaks	Rate per 100,000 population
E	49	3.0
M	15	5.3
MW	8	2.1
NE	9	2.0
NW	11	4.3
SE	18	3.8
S	26	4.0
W	17	4.0
Total	**153**	**3.4**

NOTIFICATIONS OF INFECTIOUS INTESTINAL, ZOONOTIC AND VECTORBORNE DISEASE

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

Table 5. Intestinal Infectious, Zoonotic and Vectorborne Disease Notifications Quarter 1, 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	144	39	40	27	9	73	86	48	**466**
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	11	10	2	13	13	29	9	**93**
Giardiasis	8	3	0	0	0	4	2	0	**17**
Listeriosis	1	0	0	0	0	0	0	2	**3**
Noroviral infection	107	14	10	24	2	20	29	20	**226**
Paratyphoid	~	~	~	~	~	~	~	~	**1**
Rotavirus infection[a]	70	16	14	19	14	52	52	39	**276**
Salmonellosis	22	5	4	2	4	3	6	6	**52**
Shigellosis	3	0	3	0	0	0	1	0	**7**
Staphylococcal food poisoning	0	0	0	0	0	0	0	0	**0**
Typhoid	~	~	~	~	~	~	~	~	**3**
Verotoxigenic *Escherichia coli* infection[b]	14	7	18	0	0	23	13	8	**83**
Yersiniosis	1	0	0	0	0	0	0	0	**1**
Zoonotic Disease									
Anthrax	0	0	0	0	0	0	0	0	**0**
Brucellosis	0	0	0	0	0	0	0	0	**0**
Echinococcosis	0	0	0	0	0	0	0	0	**0**
Leptospirosis	0	0	0	0	0	0	1	1	**2**
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	1	0	0	0	1	0	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	1	0	0	0	0	0	0	**5**
Lyme disease (neuroborreliosis) [c]	1	0	1	0	0	1	3	1	**7**
Malaria	5	0	0	0	0	0	2	2	**9**
Typhus	0	0	0	0	0	0	0	0	**0**
West Nile fever [c]	0	0	0	0	0	0	0	0	**0**

[a]Notifiable under the category Acute Infectious Gastroenteritis 2004-2011
[b]Notifiable under the category Enterohaemorrhagic *E. coli* 2004-2011
[c]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 first quarter of 2014. Comparison of trends with previous years is shown in Figure 1.

Table 6. Salmonellosis Notifications by HSE-Area and Month, Q1 2014

Month	E	M	MW	NE	NW	SE	S	W	Total
Jan	6	3	2	1	3	0	2	2	**19**
Feb	8	1	1	1	0	1	1	2	**15**
Mar	8	1	1	0	1	2	3	2	**18**
Total	**22**	**5**	**4**	**2**	**4**	**3**	**6**	**6**	**52**

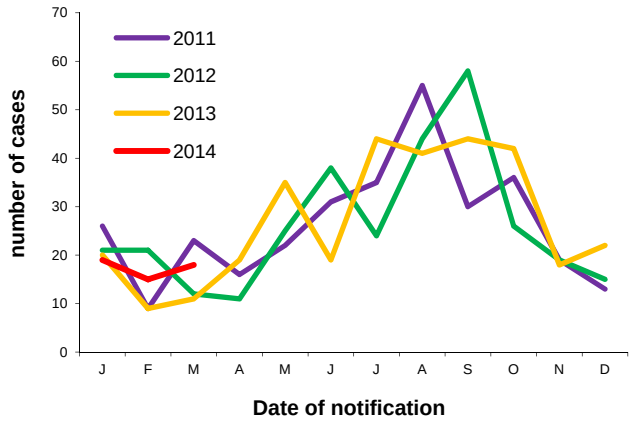

Figure 1. Seasonal Distribution of Human Salmonellosis Notifications, 2011 to end quarter 1 2014

Table 7 shows the serotypes for the *Salmonella* isolates typed by the NSSLRL in the first quarter of 2013 by HSE area (n=52). The commonest human serotypes isolated were *S.*Typhimurium* (n=27, 52%) and *S.* Enteritidis (each n= 7, 13%).

Table 8 shows the serotype distribution of confirmed *Salmonella* notifications by travel status this quarter among salmonellosis notifications on CIDR. 25% (n=13) were travel-associated, 48% (n=25) were indigenous and for 14 cases, the country of infection was unknown/not specified.

Table 7. Serotypes of *S. enterica*Referred to NSSLRL in Quarter 1, 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:-	2	1	1	0	0	1	1	3	**9**
Bovismorbificans	0	0	0	0	0	1	0	0	**1**
Dublin	0	0	0	0	1	1	0	0	**2**
Enteritidis	2	2	0	0	0	0	3	0	**7**
Infantis	2	0	0	0	0	0	0	0	**2**
Irumu	0	0	0	0	1	0	0	0	**1**
Isangi	1	0	0	0	0	0	0	0	**1**
Kentucky	1	0	0	0	0	0	0	0	**1**
Newport	1	0	0	0	1	0	0	0	**2**
Oranienburg	0	1	1	0	0	0	0	0	**2**
Paratyphi A	0	0	0	0	0	0	1	0	**1**
Saintpaul	1	0	0	0	0	0	0	0	**1**
Senftenberg	0	1	0	0	0	0	0	0	**1**
Typhi	1	0	0	0	1	1	0	0	**3**
Typhimurium	6	2	3	2	0	0	2	3	**18**
Total	**17**	**7**	**5**	**2**	**4**	**4**	**7**	**6**	**52**

Table 8.Confirmed Salmonella notifications by Serotype and Travel Status, Q1 2014 [n(%)]

Serotype	Indigenous	Travel-associated	Unk/not specified	Total
S. Enteritidis	2 (8%)	3 (23%)	2 (14%)	**7 (13%)**
S. Typhimurium	16 (64%)	3 (23%)	4 (29%)	**23 (44%)**
Other	7 (28%)	6 (46%)	7 (50%)	**20 (38%)**
Salmonella spp	0 (0%)	1 (8%)	1 (7%)	**2 (4%)**
Total	**25 (100%)**	**13 (100%)**	**14 (100%)**	**52 (100%)**

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

Outbreaks of Salmonellosis

There was one family outbreak of salmonellosis notified in Q1 2014 (Tables 1 &2).

S. Typhi and S. Paratyphi

There was one case of paratyphoid reported on CIDR in Q1 2014, associated with travel to South America. There were three cases of typhoid notified this quarter,associated with travel the Indian Sub-Continent (n=2) and the Middle East (n=1) (Table 5).

There was one travel related outbreak of *S.* Typhi this quarter.

*includes 9 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.

Eighty three cases of VTEC were notified this quarter, the regional distribution of which is shown in Table 9. This compares with 56 VTEC cases notified in Q1 2013 and 49 in Q1 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, Q1 2014.

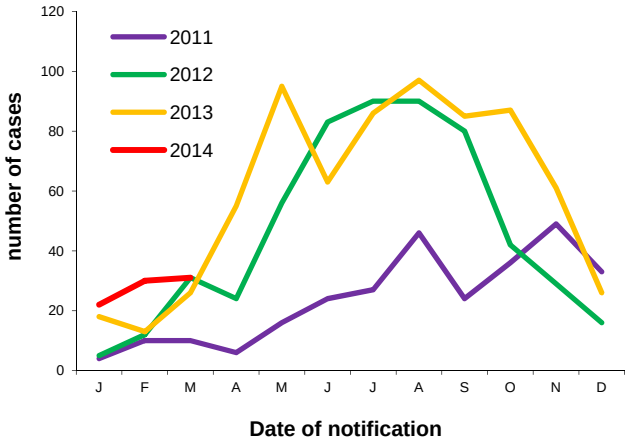

Figure 2. Seasonal distribution of VTEC cases notified 2011 to end quarter 1 2014

Table 9. Number VTEC notified by case classification and HSE-area, Q1 2014

Case classification	E	M	MW	NE	NW	SE	S	W	Total
Conf	14	7	10	0	0	23	13	7	**74**
Prob	0	0	8	0	0	0	0	1	**9**
Poss	0	0	0	0	0	0	0	0	**0**
Total	**14**	**7**	**18**	**0**	**0**	**23**	**13**	**8**	**83**

Table 10. VTEC notified by serogroup and month, Q1 2014

Month	O157	O26	Other	Total
Jan	1	4	17	**22**
Feb	4	2	24	**30**
Mar	5	3	23	**31**
Total	**10**	**9**	**64**	**83**

One VTEC case infected with an *E. coli* Ungroupable VT 1+2 strain notified this quarter was reported as having developed HUS.

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 Q1 2014.

Table 11. Verotoxin typing profiles of *E. coli* referred to the HSE DML Public Health Laboratory, Cherry Orchard Hospital in Q1 2014 (Data are provided courtesy of Dr. Eleanor McNamara and Dr. Anne Carroll).

Serogroup	*vt1*	*vt2*	*vt1+vt2*	Not spec.	Total
O157	0	6	4	**0**	**10**
O26	2	0	6	**1**	**9**
Other	25	16	18	**5**	**64**
Total	**27**	**22**	**28**	**6**	**83**

Outbreaks of VTEC infection

During this quarter, there were eight 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 first quarter of 2014 are shown in Table 12. There were 466 notifications this quarter, compared to 368 in the same period last year and 475 in Q1 2012 (Figure 3).

Table 12. *Campylobacter* notifications by HSE-Area and month, Q1 2014

Month	E	M	MW	NE	NW	SE	S	W	Total
Jan	65	12	11	10	1	31	32	20	**182**
Feb	43	19	17	4	4	26	28	15	**156**
Mar	36	8	12	13	4	16	26	13	**128**
Total	**144**	**39**	**40**	**27**	**9**	**73**	**86**	**48**	**466**

Outbreaks of *Campylobacter* infection

There was one general and one family outbreak of campylobacteriosis reported in Q1 2014 (Tables 1 and 2).

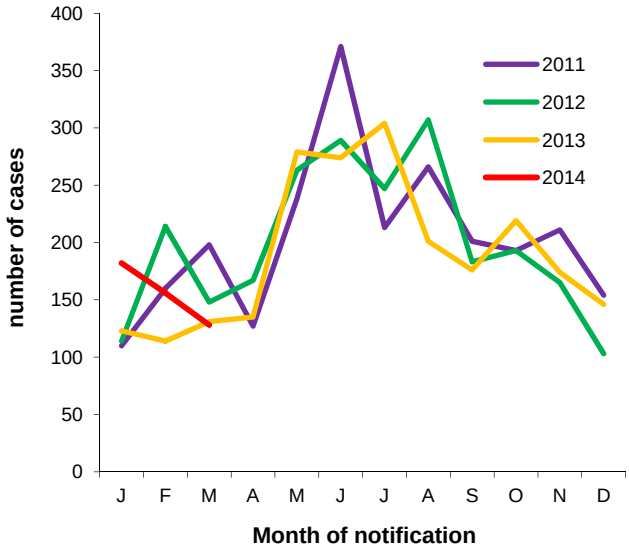

Figure 3. Seasonal distribution of *Campylobacter* notifications 2011 to end quarter 1 2014

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 Q1 2014, 93 cases of cryptosporidiosis were notified (table 13), compared to 139 in the same period in 2013 and 136 in Q1 2012 (Figure 4).

Table 13. Cryptosporidiosis notifications by HSE-Area and month, Q1 2014

Month	E	M	MW	NE	NW	SE	S	W	Total
Jan	2	1	2	1	2	0	2	3	**13**
Feb	3	3	1	0	4	4	11	2	**28**
Mar	1	7	7	1	7	9	16	4	**52**
Total	**6**	**11**	**10**	**2**	**13**	**13**	**29**	**9**	**93**

Outbreaks of cryptosporidiosis

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

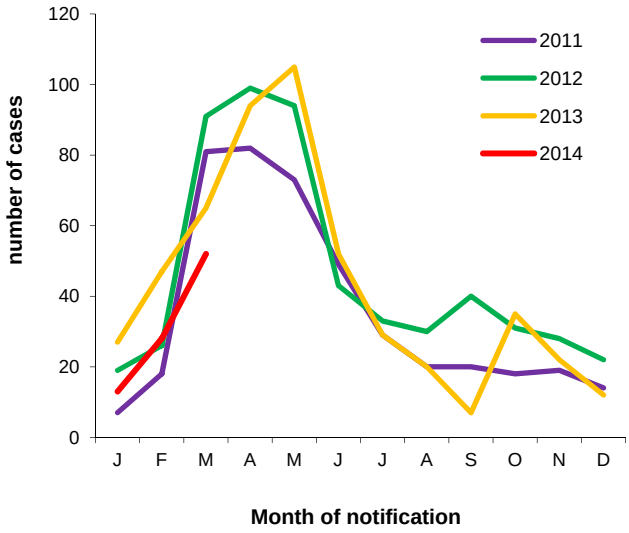

Figure 4. Seasonal distribution of cryptosporidiosis notifications 2011 to end quarter 1 2014

NOROVIRUS

Human noroviral infection became a notifiable disease on January 1st 2004. There were 226 cases notified in the first 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, Q1 2014

Month	E	M	MW	NE	NW	SE	S	W	Total
Jan	50	7	5	18	0	11	8	10	**109**
Feb	20	3	3	3	1	4	14	6	**54**
Mar	37	4	2	3	1	5	7	4	**63**
Total	**107**	**14**	**10**	**24**	**2**	**20**	**29**	**20**	**226**

Norovirus outbreaks

Norovirus or suspect viral aetiology is the commonest cause of outbreaks of acute gastroenteritis in Ireland. In the first quarter of 2014, there were 26 outbreaks confirmed as being caused by this virus, involving at least 499 people becoming ill, as outlined in tables 1 & 2. The seasonal trend is outlined in figure 5.

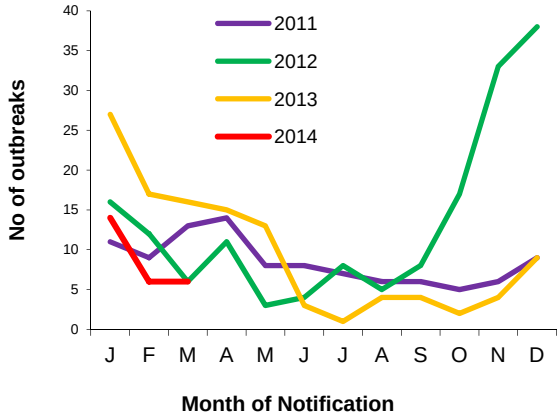

Figure 5. Seasonal distribution of confirmed norovirus outbreaks, 2011 to end quarter 1 2014

SHIGELLA

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

During Q1 2014, seven cases of shigellosis were notified (table 5). This compares with seven cases notified in Q1 2013 and six in Q1 2012.

Five cases were travel related (two cases were associated with travel to Egypt, and one case each associated with travel to India, Haiti and Kenya), Ireland was reported as country of infection for one case and country of infection was reported as unknown/not specified for the remaining case.

Table 15: Species and serotype distribution of Q1 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	5
Total	**5**

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 1 2014, seventeen cases of giardiasis were notified (table 5); this compares with 11 cases notified in Q1 2013 and 12 in Q1 2012.

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

Outbreaks of giardiasis

There was one family outbreak of giardiasis notified in Q1 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 three cases (one adult, one pregnancy related and one neonatal) of listeriosis notified in Q1 2014, compared to four cases in quarter 1 2013 and four in quarter 1 2012. Two isolates were referred for typing to NSSLRL this quarter (Table 16).

Table 16: Serotypes of Q1 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	2

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 first quarter of 2014 are shown in Table 17. The number of notifications is considerably fewer than in quarter 1 in previous years (Figure 6).

Table 17. Rotavirus infection by HSE-Area and month, Q1 2014

Month	E	M	MW	NE	NW	SE	S	W	Total
Jan	4	1	2	2	3	4	8	3	**27**
Feb	13	5	5	4	4	19	11	9	**70**
Mar	53	10	7	13	7	29	33	27	**179**
Total	**70**	**16**	**14**	**19**	**14**	**52**	**52**	**39**	**276**

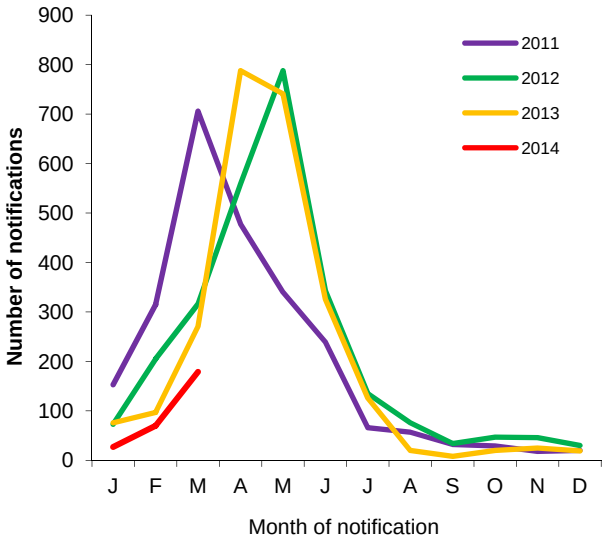

Figure 6. Seasonal distribution of rotavirus notifications, 2011 to end quarter 1 2014

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) 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 Q1 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 ten cases notified in the same period in 2013 and eight cases in Q1 2012.

There were two cases of leptospirosis notified in Q1 2014; this compares with three in Q1 2013 and four in Q1 2012. Both cases in Q1 2014 were reported to have acquired their illness through occupational exposure.

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

MALARIA

Malaria is a notifiable disease for many years. The Q1 2014 notifications are reported in table 5 by HSE-Area.

Nine cases of malaria were notified in Q1 2014. This compares with ten cases reported in Q1 2013 and four in Q1 2012.

Six cases were reported as *P. falciparum*, while the organism was not specified for the three remaining cases.

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

The reason for travel for five cases was reported as 'visiting family in country of origin', one case was in a foreign visitor ill in Ireland and 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 Q1 2014 notifications are reported in Table 5 by HSE-Area.

There were seven cases of Lyme disease (neuroborreliosis) and five cases of Dengue fever reported in Q1 2014.

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

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