

SURVEILLANCE of INFECTIOUS INTESTINAL (IID), ZOO NOTIC AND VECTORBORNE DISEASE, and OUTBREAKS of INFECTIOUS DISEASE



A quarterly report by the Health Protection Surveillance Centre in collaboration with the Departments of Public Health

Quarter 3 –2008

December 2008

This is the third quarterly report for 2008 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, 2008

Month	HSE region	Location	No. ill *	No. Hosp.	Date Onset	Suspect mode of transmission	Disease
Jul	SE	Hospital	4	-	25/06/08	P-P	AIG
Jul	NW	Comm. Hosp/Long-stay unit	6	0	-	P-P	AIG
Jul	E	Comm. Hosp/Long-stay unit	17	3	30/06/08	P-P	Noroviral infection
Jul	E	Creche	41	-	-	Not Specified	AIG
Jul	S	Hotel	24	0	13/07/08	Not Specified	AIG
Jul	HPSC	Community outbreak	11	3	23/06/08	FB	Salmonellosis
Jul	E	Residential institution	45	-	23/07/08	Not Specified	Noroviral infection
Jul	S	Hospital	11	-	06/06/08	Unknown	Clostridium difficile
Aug	E	Other	25	2	02/08/08	Unknown	AIG
Aug	E	Hospital	16	-	-	P-P	Noroviral infection
Aug	S	Travel related	2	0	19/07/08	FB	Salmonellosis
Aug	NW	Residential institution	4	0	11/08/08	P-P	AIG
Aug	HPSC	Travel related	9	1	01/07/08	FB	Salmonellosis
Aug	HPSC	Travel related	4	-	14/07/08	FB	Salmonellosis
Aug	NE	Residential institution	3	1	26/08/08	Unknown	AIG
Sep	E	Comm. Hosp/Long-stay unit	19	-	24/08/08	Unknown	AIG
Sep	SE	Private house	1	0	04/08/08	P-P	EHEC
Sep	SE	Private house	2	0	08/08/08	P-P	EHEC
Sep	SE	Residential institution	6	0	01/09/08	P-P & AB	AIG
Sep	NW	Comm. Hosp/Long-stay unit	38	19	05/09/08	P-P	AIG
Sep	SE	Community outbreak	2	2	04/08/08	Unknown	EHEC
Sep	W	Hospital	18	18	01/06/08	Unknown	Clostridium difficile
Sep	NW	Hospital	4	4	-	P-P & AB	Noroviral infection
Sep	S	Hotel	15	0	15/09/08	P-P	Noroviral infection
Aug	NW	Hospital	23	19	07/08/08	P-P	AIG
Sep	NE	Creche	5	0	-	P-P	EHEC
Sep	E	Hospital	42	42	21/07/08	P-P	Clostridium difficile
Sep	E	Residential institution	31	-	22/09/08	P-P	Noroviral infection
Sep	E	Other	22	12	20/09/08	P-P & AB	AIG
Sep	NEHB	Residential institution	6	0	14/09/08	Airborne	Noroviral infection

P-P denotes Person-to-Person transmission, FB denotes foodborne, WB denotes waterborne; AB denotes airborne; AIG denotes Acute Infectious

Gastroenteritis; EHEC denotes infection with Enterohaemorrhagic *E. coli*

* Total numbers ill does not include asymptomatic cases

Table 2. Family Outbreaks of Infectious Intestinal Disease (IID) in Quarter 3, 2008

Month	HSE region	Location	No. ill *	No. Hosp.	Date Onset	Suspect mode of transmission	Disease
Jul	SE	Private house	2	2	03/06/08	WB & Animal	Cryptosporidiosis
Jul	E	Private house	2	-	-	Not Specified	EHEC
Jul	E	Private house	2	0	-	P-P	Giardiasis
Jul	M	Private house	2	0	06/07/08	Unknown	EHEC
Jul	SE	Private house	2	1	04/05/08	Not Specified	Giardiasis
Jul	S	Private house	3	2	01/07/08	P-P	Hepatitis A (acute)
Jul	E	Travel related	3	-	-	Not Specified	Salmonellosis

Jul	W	Private house	3	1	-	FB & WB	EHEC
Jul	E	Private house	1	0	-	P-P	EHEC
Aug	S	Private house	2	-	24/07/08	Unknown	Campylobacter infection
Aug	W	Private house	2	0	-	P-P	Adenovirus
Aug	S	Private house	5	3	02/08/08	P-P & WB	EHEC
Aug	S	Private house	2	0	21/07/08	P-P & WB	EHEC
Aug	SE	Private house	2	2	25/07/08	Unknown	Salmonellosis
Aug	S	Private house	5	1	02/08/08	P-P & WB	EHEC
Aug	NW	Private house	2	0	20/06/08	P-P	Campylobacter infection
Aug	S	Private house	5	1	10/08/08	P-P & WB	EHEC
Aug	NW	Private house	2	2	07/08/08	P-P	Campylobacter infection
Sep	NW	Private house	2	1	-	P-P	EHEC
Sep	E	Private house	2	0	29/08/08	FB	Campylobacter infection
Sep	NW	Private house	4	0	08/08/08	P-P	Cryptosporidiosis
Sep	M	Private house	5	0	22/08/08	WB	EHEC
Sep	E	Other	3	1	20/07/08	WB	EHEC
Sep	NW	Private house	2	0	-	P-P	EHEC
Sep	M	Private house	1	1	11/09/08	FB	EHEC
Sep	NW	Private house	2	0	23/08/08	P-P	Salmonellosis

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

* Total numbers ill does not include asymptomatic cases

Table 3. Non-IID Outbreaks in Quarter 3, 2008

Month	HSE region	Type of outbreak	Location	No. ill *	No. Hosp.	Date Onset	Suspect mode of transmission	Organism
Jul	E	Family	Private house	2	-	-	P-P	Viral meningitis
Jul	E	General	Workplace	3	2	26/05/08	AB	Legionellosis
Jul	E	General	Creche	19	-	25/05/08	P-P & AB	Varicella
Jul	E	Family	Private house	2	0	17/07/08	P-P	Mumps
Jul	MW	General	Hotel	10	-	13/07/08	AB	Group A strep
Aug	NE	Family	Private house	2	2	23/07/08	AB	Mumps
Aug	NE	Family	Private house	3	-	-	AB	Mumps
Aug	W	General	Irish college	4	0	17/07/08	P-P	Mumps
Aug	E	Family	Private house	3	1	19/07/08	P-P	Measles
Aug	W	General	Irish college	8	1	05/08/08	P-P	Mumps
Aug	W	General	Community outbreak	3	0	12/08/08	P-P	Mumps
Aug	E	Family	Private house	6	-	04/08/08	P-P	Mumps
Aug	E	Family	Private house	3	0	24/07/08	P-P	Pertussis
Sep	E	General	Residential institution	5	-	-	Not Specified	Varicella
Sep	M	General	Community outbreak	14	0	26/08/08	Not Specified	Mumps
Sep	E	Family	Other	2	1	28/08/08	P-P & AB	Mumps
Sep	W	Family	Private house	3	-	09/09/08	P-P	Mumps
Sep	W	Family	Private house	2	0	19/08/08	AB	Mumps
Sep	E	General	Community outbreak	3	0	05/09/08	P-P & AB	Mumps

P-P denotes Person-to-Person transmission, WB denotes waterborne; AB denotes airborne;

* Total numbers ill does not include asymptomatic cases

Since July 2001, outbreaks have been reported to HPSC. Initial information is provided by a public health professional using a preliminary notification form (by fax or email). A full report is then forwarded 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 on final reports is crucial in providing information on the reasons why the outbreak occurred, the factors that lead to the spread of disease and the lessons that can be learnt to prevent further such outbreaks.

Since the 1st January 2004, with the amendment to the Infectious Diseases Regulations (2003), there is a statutory requirement for medical practitioners and clinical directors of a diagnostic laboratory to notify to the medical officer of health 'any unusual clusters or changing patterns of any illness, and individual cases thereof, that may be of public health concern'.

Tables 1 and 2 present a line listing of all general and family outbreaks of IID reported to HPSC in the third quarter of 2008. There were 30 general and 26 family IID outbreaks reported during this period, resulting in at least 524 people being ill.

Acute Infectious Gastroenteritis was responsible for the majority of general outbreaks of IID (43% of all general outbreaks).

The most common cause of family outbreaks of IID was EHEC, with thirteen outbreaks (50% of all family outbreaks) caused by this pathogen. The other pathogens responsible for family outbreaks were Adenovirus, campylobacter infection, cryptosporidiosis, giardiasis, Hepatitis A and salmonellosis, (Table 2).

Most general IID outbreaks were transmitted person-to-person & airborne (57%). Seventeen general outbreaks (57%) were reported to have occurred in healthcare settings, i.e. hospitals or residential institutions, during this period.

There were nineteen non-IID outbreaks reported during Quarter 3 - see Table 3.

Table 4 outlines the outbreak rate per HSE-area for outbreaks notified during Q3 2008.

Table 4. No. of infectious disease outbreaks per HSE region

HSE Area	No. of outbreaks	Rate per 100,000 population
E	25	1.7
M	4	1.6
MW	1	0.3
NE	5	1.3
NW	11	4.6
SE	8	1.7
S	10	1.6
W	8	2.0
Total	72	1.7

NOTIFICATIONS OF INFECTIOUS INTESTINAL, ZOOBOTIC AND VECTORBORNE DISEASE

The number of notifications of infectious intestinal, zoonotic and vectorborne disease by HSE-Area for the third quarter of 2008 is shown in Table 5.

Table 5. Intestinal Infectious, Zoonotic and Vectorborne Disease Notifications Quarter 3, 2008 by HSE-Area

Infectious Intestinal Disease	E	M	MW	NE	NW	SE	S	W	Total
Acute infectious gastroenteritis* (incl. rotavirus & <i>C. difficile</i>)	384	33	42	40	58	85	130	124	896
<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
Campylobacter infection	177	36	63	41	26	64	70	59	536
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	4	6	12	1	9	15	16	15	78
Enterohaemorrhagic <i>Escherichia coli</i>	24	8	12	8	10	14	21	11	108
Giardiasis	5	0	0	0	1	5	0	3	14
Listeriosis	1	0	0	1	0	0	1	0	3
Noroviral infection	52	3	2	6	9	8	3	4	87
Paratyphoid	~	~	~	~	~	~	~	~	2
Salmonellosis	73	20	13	19	11	16	29	17	198
Shigellosis	6	1	2	0	2	3	4	1	19
Staphylococcal food poisoning	0	0	0	0	0	0	0	0	0
Typhoid	~	~	~	~	~	~	~	~	3
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	0	0	0	0	0	0	0
Leptospirosis	3	0	0	0	1	1	2	2	9
Plague	0	0	0	0	0	0	0	0	0
Q Fever	0	0	1	0	0	0	2	0	3
Rabies	0	0	0	0	0	0	0	0	0
Toxoplasmosis	3	1	0	0	0	0	6	2	12
Trichinosis	0	0	0	0	0	0	0	0	0
Typhus	0	0	0	0	0	0	0	0	0
Vectorborne Disease									
Malaria	7	3	2	5	1	6	3	4	31

*Since May 4th 2008, the category Acute Infectious Gastroenteritis has included *C. difficile*. Note that data for AIG since this time is not directly comparable with data collected previous to this

Human salmonellosis (*S. enterica*) is a notifiable disease. The National Reference Laboratory for Salmonella (NSRL) 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 2008. Comparison of trends with previous years is shown in Figure 1 below.

Table 6. Salmonellosis Notifications by HSE-Area and Month, Q3 2008

Month	E	M	MW	NE	NW	SE	S	W	Total
Jul	21	5	6	8	5	7	11	6	69
Aug	23	7	3	5	2	4	10	9	63
Sep	29	8	4	6	4	5	8	2	66
Total	73	20	13	19	11	16	29	17	198

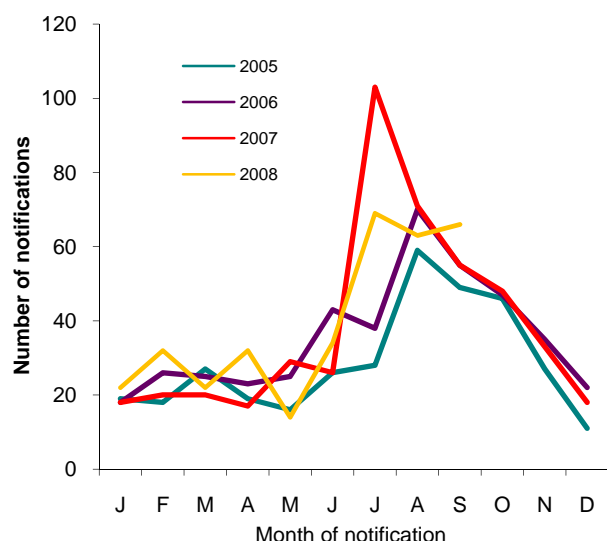


Figure 1. Seasonal Distribution of Human Salmonellosis Notifications, 2005 to end quarter 3 2008

Table 7 shows the *S. enterica* isolates typed by the NSRL in the third quarter of 2008 (n=197). The commonest human serotypes isolated were *S. Enteritidis* (n=68 [35%]) and *S. Typhimurium* (n= 55 [28%]).

Seventy-six (39%) *S. enterica* isolates were reported to be associated with travel outside of Ireland during this quarter.

Table 7. Serotypes of *S. enterica* referred to NSRL in Quarter 3, 2008 (Data are provided courtesy of Prof. Martin Cormican and Dr Geraldine Corbett-Feeney, NSRL).

Serotype	E	M	MW	NE	NW	SE	S	W	Total
4,5,12:i:-	1	0	0	0	0	0	0	0	1
Agona	1	0	3	2	1	1	1	3	12
Anatum	0	0	0	0	0	1	0	0	1
Arechavaleta	1	0	0	0	0	0	0	0	1
Bardo	1	0	0	0	0	0	0	0	1
Blockley	0	0	0	1	0	0	1	0	2
Bredeney	1	0	0	0	0	1	1	0	3
Chester	1	0	0	0	0	0	0	0	1
Choleraesuis	1	0	0	0	0	0	0	0	1
Concord	1	0	0	0	0	0	0	0	1
Enteritidis	24	6	4	7	6	4	10	7	68
Hadar	1	0	0	0	1	0	0	0	2
Haifa	1	0	0	0	0	0	0	0	1
Hvittingfoss	0	0	0	0	0	1	0	0	1
Infantis	1	1	0		0	0	0	0	2
Java	2	0	0	0	0	0	0	0	2
Javiana	0	2	0	0	0	0	0	0	2
Kaapstad	1	0	0	0	0	0	0	0	1
Kentucky	0	0	3	0	1	0	0	0	4
Kottbus	0	0	0	0	0	0	1	0	1
Kumasi	1	0	0	0	0	0	0	0	1
Litchfield	0	0	0	0	0	1	0	0	1
Manhattan	0	0	0	0	1	0	0	0	1
Mikawasima	1	0	0	0	0	0	0	0	1
Montevideo	0	0	0	1	0	0	0	0	1
Muenster	1	0	0	0	0	0	0	0	1
Napoli	0	0	0	1	0	0	1	0	2
Newport	0	0	1	0	0	0	0	0	1
Oranienburg	1	0	0	0	0	0	0	0	1
Panama	1	0	0	0	0	0	1	0	2
Paratyphi A	1	0	0	0	0	0	0	1	2
Pretoria	0	0	0	0	0	0	0	1	1
Remo	1	0	0	0	0	0	0	0	1
Saintpaul	0	1	0	0	0	0	0	0	1
Schwarzengrund	0	0	0	0	0	0	0	1	1
Senftenberg	1	0	0	0	0	0	0	0	1
Stanley	2	0	0	0	0	0	0	1	3
Thompson	1	0	0	0	0	0	0	0	1
Typhi	1	0	0	0	0	1	0	0	2
Typhimurium	18	7	2	7	1	6	12	2	55
Unnamed	2	1	0	0	0	0	0	1	4
Virchow	2	0	0	0	0	0	2	0	4
Weltevreden	0	1	0	0	0	0	0	0	1
Total	72	19	13	19	11	16	30	17	197

S. Typhi and S. Paratyphi

There were three cases of *S. typhi* notified during Quarter 3, 2008, one of which was associated with travel to India. There were also two cases of *S. Paratyphi* A notified, associated with travel to India and Indonesia.

Outbreaks of salmonellosis

There were seven outbreaks of salmonellosis reported in Q3 2008, four general and three family outbreaks (see Table 1 and Table 2). This included a large international outbreak of *S. Agona*.^{1,2}

1. O'Flanagan et al. A multi-country outbreak of *Salmonella* Agona, February - August 2008. *Euro Surveill.* 2008;13(33):pii=18956. Available online: <http://www.eurosurveillance.org/ViewArticle.aspx?ArticleId=18956>
2. HPSC. Update on a multi-country outbreak of *Salmonella* Agona, February - August 2008. *Epi-Insight.* 9(9):4 http://www.hpsc.ie/hpsc/EPI-Insight/Volume92008/File_3130.en.pdf

VEROTOXIGENIC *E. COLI* (VTEC)

Illness caused by enterohaemorrhagic *E. coli* (EHEC) became a notifiable disease on January 1st 2004. Under EHEC, all verotoxin positive *E. coli*, and *E. coli* of serogroups O157, O26, O111, O103, O145 regardless of whether verotoxin producers, are reported. Previously, VTEC were notified under the category of 'Food Poisoning (bacterial other than Salmonella)'.

The number of EHEC notified in Q3 2008 is shown in Table 5. Under the legislation, it is required that information on EHEC be gathered and reported. However, because of their clinical and public health significance, it is important to distinguish between those isolates that are verotoxin-producers and those that are not.

One-hundred and eight EHEC were notified in this quarter, 97 of which were VTEC (Table 8). This compares with 107 VTEC cases notified in Q3 2007 and 67 in Q3 2006 (Figure 2). Table 8 shows the number of VTEC cases reported by serogroup and month, Q3 2008.

Table 8. Confirmed and Probable VTEC Notified by Serogroup and Month, Q3 2008

Month	O157	O26	Other	Total
Jul	14	6 ^c	2	22
Aug	35 ^{a,b}	2	0	37
Sep	29 ^b	3 ^c	6	38
Total	76	11	8	97

^atwo cases reported as probable on the basis of epi-linkage

^bone case was co-infected with serogroup O26

^cone case was reported as probable on the basis of detection of vt genes

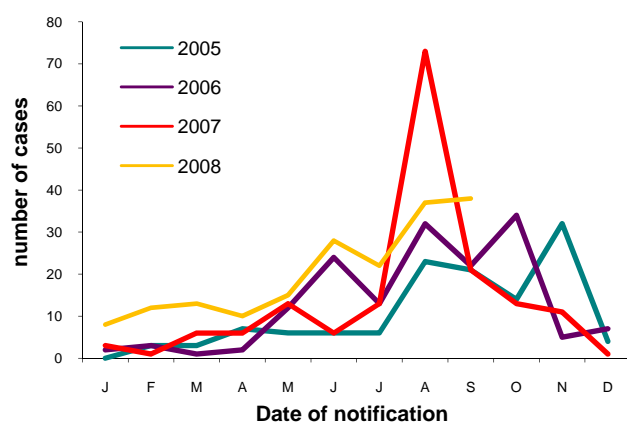


Figure 2. Seasonal distribution of confirmed and probable VTEC cases notified 2005 to end quarter 3 2008

Note includes 52 probable cases reported associated with an outbreak in Aug 2007.

Five cases notified during this quarter were reported as having developed HUS: one confirmed and one probable *E. coli* O157 case, and three *E. coli* O26 cases.

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. Tables 9 and 10 show the phage types and VT types of VTEC isolates referred to the laboratory in Q3 2008.

Table 9. Phage Types of VTEC O157 isolates referred to the HSE DML Public Health Laboratory, Cherry Orchard Hospital in Q3 2008. (Data are provided courtesy of Dr. Eleanor McNamara and Dr. Anne Carroll).

Phage type	Number of isolates
4	1
8	8
14	8
31	5
32	37
51	4
72	1
21/28	3
RDNC	3
Unknown	6
Total	76

Includes isolates from confirmed cases only

Table 10. Verotoxin typing results of VTEC isolates referred to the HSE DML Public Health Laboratory, Cherry Orchard Hospital in Q3 2008. (Data are provided courtesy of Dr. Eleanor McNamara and Dr. Anne Carroll).

Serogroup	vt1	vt2	vt1+vt2	Unknown	Total
O157	0	62	13	1	76
O26	2	0	11	0	13
Other	1	2	5	0	8
Total	3	64	29	1	97

^aIncludes all strains from mixed infections

Outbreaks of VTEC infection

During this quarter, thirteen family outbreaks and four general outbreaks of VTEC infection were reported (see Table 1 and Table 2).

CAMPYLOBACTER

Human campylobacteriosis became a notifiable disease on January 1st 2004. Prior to this, human campylobacter infection was notified under the category of 'Food Poisoning (bacterial other than Salmonella)'. The notifications for the third quarter of 2008 are shown in Table 11. The number of cases notified this quarter is similar to quarter 3 in previous years (Figure 3).

Table 11. Campylobacter Notifications by HSE-Area and Month, Q3 2008

Month	E	M	MW	NE	NW	SE	S	W	Total
Jul	60	10	23	20	10	26	30	25	204
Aug	57	9	15	15	9	22	21	21	169
Sep	60	17	25	6	7	16	19	13	163
Total	177	36	63	41	26	64	70	59	536

Outbreaks of Campylobacter infection

There were four family outbreaks of campylobacteriosis reported in Q3 2008 (Table 2).

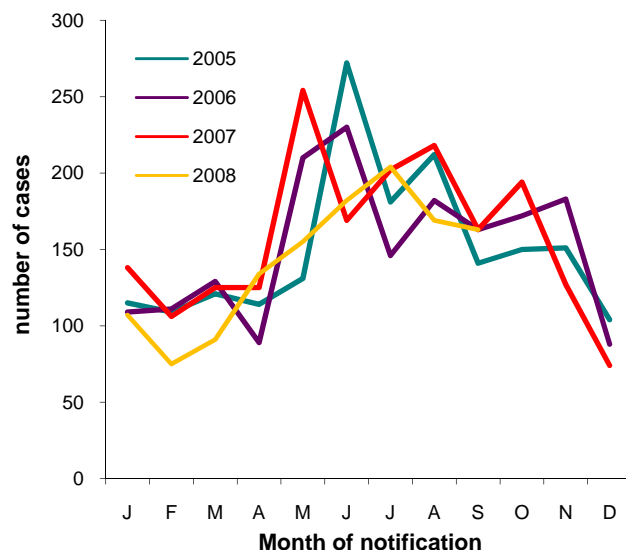


Figure 3. Seasonal distribution of Campylobacter notifications 2005 to end quarter 3 2008

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 2008, 78 cases of cryptosporidiosis were notified (Table 12), compared to 93 in the same period last year and 59 in Q3 2006 (Figure 4).

Table 12. Cryptosporidiosis Notifications by HSE-Area and Month, Q3 2008

Month	E	M	MW	NE	NW	SE	S	W	Total
Jul	1	1	1	1	1	7	8	3	23
Aug	1	2	5	0	1	2	3	7	21
Sep	2	3	6	0	7	6	5	5	34
Total	4	6	12	1	9	15	16	15	78

Outbreaks of cryptosporidiosis

There were two family outbreaks of cryptosporidiosis reported in Quarter 3 (Table 1).

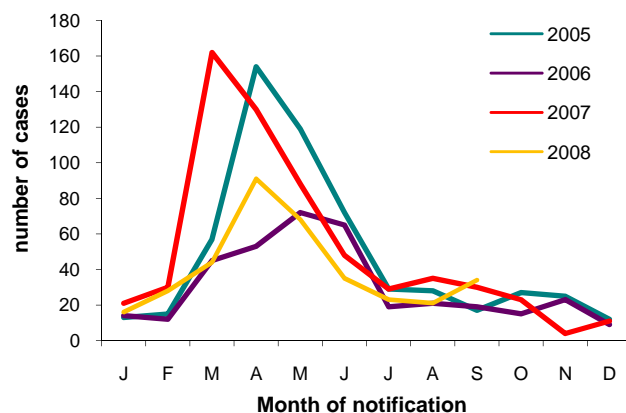


Figure 4. Seasonal distribution of cryptosporidiosis notifications 2005 to end quarter 3 2008

NOROVIRUS

Human noroviral infection became a notifiable disease on January 1st 2004. There were 363 cases reported in the third quarter of 2008, as shown in Table 13. These data are certainly an under-ascertainment of the true burden of disease due to this pathogen.

Table 13. Norovirus Notifications by HSE-Area and Month, Q3 2008

Month	E	M	MW	NE	NW	SE	S	W	Total
Jul	10	0	6	2	1	0	1	1	21
Aug	1	0	7	1	1	1	1	0	12
Sep	1	1	5	1	0	0	0	0	8
Total	12	1	18	4	2	1	2	1	41

Norovirus outbreaks

Norovirus or suspect viral aetiology is the commonest cause of outbreaks of acute gastroenteritis in Ireland. In the third quarter of 2008 there were 7 outbreaks confirmed as being caused by this virus, involving at

least 134 people becoming ill, as outlined in Table 1. The seasonal trend is outlined in Figure 5.

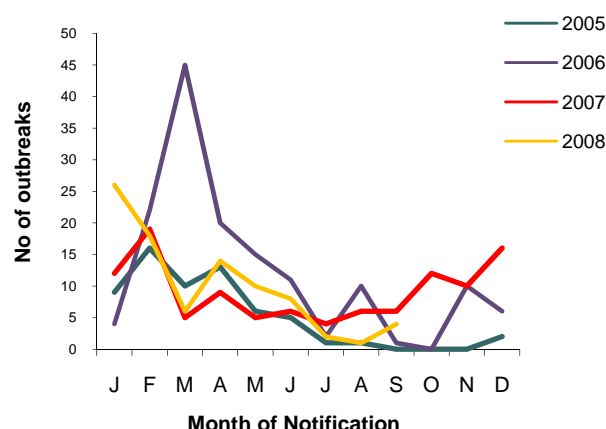


Figure 5. Seasonal distribution of confirmed norovirus outbreaks, 2005 to end quarter 3 2008.

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 of listeriosis notified in Q3 2008, compared to 11 in quarter 3 2007 and one in quarter 3 2006. All were non-pregnancy related adult

cases. Only one isolate was referred to the NSRL this quarter.

Table 14: Serotypes of Q3 human *Listeria* isolates referred to the NSRL (Data are provided courtesy of Prof. Martin Cormican and staff of the NSRL).

Serotype	Number of isolates
1/2	1

SHIGELLA

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

During Q3 2008, nineteen cases of shigellosis were notified (Table 5). This compares with seventeen cases notified as shigellosis in Q3 in 2007 and twenty in Q3 2006. Eight cases were reported as *S. sonnei*, nine as *S. flexneri* and two as *S. boydii*.

During this quarter, seven cases (37%) were reported to have acquired their illness abroad, two each in

Egypt and Mexico, and one each in Madagascar, Morocco, Nigeria and Pakistan. Country of infection was reported as Ireland for three further cases, and as 'not specified' or 'unknown' for the remaining eight cases.

Outbreaks of shigellosis

There were no outbreaks of shigellosis reported in Q3 2008 (Table 1 & 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 2008, fourteen cases of giardiasis were notified (Table 5); this compares with ten cases notified in Q3 2007 and sixteen in Q3 2006.

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 infections/intoxications notified in Q3 2008 (Table 5).

ACUTE INFECTIOUS GASTROENTERITIS incl. ROTAVIRUS

Since 1st January 2004, there is a notifiable disease category termed 'Acute Infectious Gastroenteritis'. Until May 3rd 2008, this included all unspecified causes of gastroenteritis and also specifically, gastroenteritis due to rotavirus. Since May 4th 2008, it has also specifically included *Clostridium difficile* associated disease (CDAD). AIG cases due to unspecified causes or to rotavirus are notifiable in all age groups, unlike the former notifiable disease category of 'Gastroenteritis in children under 2 years'. CDAD cases are only notifiable in patients two years or older that meet the case definition.

During Quarter 3 2008, there were 896 notifications of acute infectious gastroenteritis. 178 of these (20%) were reported as rotavirus (as shown in Table 15).

Table 15. Rotaviral Infections Notified under the Category of 'Acute Infectious Gastroenteritis' by HSE-Area and Month, Q3 2008

Month	E	M	MW	NE	NW	SE	S	W	Total
Jul	16	16	7	20	21	23	20	15	138
Aug	2	3	0	1	1	5	4	7	23
Sep	3	2	0	3	2	1	4	2	17
Total	21	21	7	24	24	29	28	24	178

NON-IID ZOONOTIC DISEASES

Non-IID zoonoses now notifiable include: anthrax, brucellosis, echinococcosis, leptospirosis, plague, Q Fever, toxoplasmosis, trichinosis, typhus and rabies. The Q3 2008 notifications of these zoonotic diseases are reported by HSE-Area in Table 5.

Twelve cases of toxoplasmosis were notified in this quarter. This compares with eleven cases notified in the same period in 2007 and sixteen cases in Q3 2006.

There were no cases of brucellosis reported during this quarter compared with ten in Q3 2007 and six in Q3 2006.

Nine cases of leptospirosis were notified in Q3 2008; this compares with ten in Q3 2007 and four in Q3 2006. Five were reported as occupationally acquired and four were associated with leisure activities. Exposure in Asia was recorded for three cases.

There were three cases of Q fever notified this quarter, compared to five in Q3 in 2007 and two in Q3 2006.

MALARIA

Malaria is a notifiable disease for many years. The Q2 2008 notifications are reported in Table 5 by HSE-Area.

Thirty-one cases of malaria were notified in Q3 2008. This compares with 31 cases reported in Q3 2007 and 34 in Q3 2006.

Twenty-seven cases were reported as *P. falciparum*, and for four cases, the species was not specified.

Twenty-four cases were exposed in Sub-Saharan Africa, while no data were provided on country of infection for the remaining seven cases.

The reason for travel for seventeen cases was reported as visiting family in country of origin. There were two cases among Irish citizens living abroad, two with reason for travel as other, one case among business/professional travellers, and the reason for travel not specified for nine cases.

Report prepared by:

Ms Fiona Cloak
Dr Patricia Garvey
Ms. Mairead Skally
Dr Paul McKeown