

07

Infectious Disease Outbreaks

7. Outbreaks

Summary

Number of outbreaks: 520
 Number of IID outbreaks: 372
 Number of non-IID outbreaks: 148

During 2013, 520 outbreaks of infectious diseases were reported with 5,886 associated cases of illness, including 810 (13.8%) cases hospitalised and 32 deaths*. Regional variation in outbreaks was observed between HSE areas with the highest rates observed in HSE-NW (25.9/100,000 population), while the lowest rate was observed in HSE-NE at 5.0 per 100,000 population. Table 1 details the regional distribution of all outbreaks of infectious disease, outbreaks of infectious intestinal disease (IID) and outbreaks of non-IID.

General outbreaks accounted for 69.4% (n= 361) of all outbreaks notified during 2013. The remaining outbreaks (30.6%, n= 159) were reported as family/ household outbreaks. Similar to previous years, person-to-person spread† was reported as the mode of transmission for the majority of outbreaks (65.6%, n=341). Most of these outbreaks were due to norovirus, acute infectious gastroenteritis (AIG), influenza/ influenza-like illness and verotoxigenic *E. coli* (VTEC).

The most frequently reported outbreak locations were private houses (n=138, 26.5%), residential institutions (n=106, 20.4%) and community hospital/ long-stay units

(n=101, 19.4%). The highest numbers ill were reported from outbreaks in residential institutions (n=1,607), community hospital/long-stay units (n=1,424) and hospitals (n=1,408). Table 2 details the number of IID and non-IID outbreaks and numbers ill by outbreak location.

Infectious intestinal disease (IID) outbreaks:

During 2013, 372 IID outbreaks were reported, which was a decrease of 8.1% compared to the number of IID outbreaks reported during 2012 (n=405). However, the percentage of IID outbreaks as a proportion of total outbreaks remained stable at 71.5% when compared to recent years (78.0% in 2012 and 74.4% in 2011). The Table 3 details the regional distribution of outbreaks of infectious intestinal disease (IID).

Norovirus/ suspected viral outbreaks accounted for 54.8% of all IID outbreaks reported in 2013. Figure 1 compares norovirus/ suspected viral outbreaks with non-norovirus IID outbreaks by year from 2001 to 2013. Norovirus/ suspected norovirus was also responsible for four of the six largest outbreaks during 2013. Numbers ill ranged from two cases to 287 cases.

After noroviral infection (n=114), the next most commonly reported IID outbreaks were VTEC (n=96), AIG (n=90), and cryptosporidiosis (n=28). The number of general and family outbreaks of IID and numbers ill are outlined in Table 4.

Table 1: Number of outbreaks by HSE area, 2013

HSE area	Number of outbreaks	Outbreak rate per 100,000	Number ill	Number hospitalised	Number of deaths	Number of IID outbreaks	Number of Non-IID outbreaks
HSE-E	119	7.3	2,546	434	9	66	53
HSE-M	42	14.9	277	22	6	35	7
HSE-MW	52	13.7	222	61	0	44	8
HSE-NE	22	5.0	188	34	5	17	5
HSE-NW	67	25.9	560	58	0	43	24
HSE-SE	67	13.5	747	35	3	54	13
HSE-S	70	10.5	654	28	7	48	22
HSE-W	74	16.6	610	102	2	58	16
HPSC	7	-	82	36	0	7	0
Total	520	11.3	5,886	810	32	372	148

*Outbreak data extracted from CIDR on 22/09/2014.

† Including 78 outbreaks reported as person to person

Table 2: Number of IID and non-IID outbreaks and number ill by outbreak location, 2013

Outbreak location	IID		Non-IID			Total outbreaks
	Number of outbreaks	Number ill	Number of outbreaks	Number ill	Number of outbreaks	Number ill
Comm. hosp/long-stay unit	62	776	39	648	101	1,424
Community outbreak	16	152	4	17	20	169
Crèche	7	25	3	13	10	38
Extended family	8	26	6	26	14	52
Hospital	50	1,065	10	343	60	1,408
Hotel	7	190	0	0	7	190
Nursing home	18	261	2	13	20	274
Other	10	57	4	21	14	78
Private house	119	229	19	44	138	273
Public house	1	17	0	0	1	17
Residential institution	61	945	45	662	106	1,607
Restaurant / cafe	2	86	0	0	2	86
School	3	106	11	120	14	226
Travel related	3	7	2	7	5	14
University/college	0	0	2	5	2	5
Workplace	0	0	1	3	1	3
Unknown	3	12	0	0	3	12
Not specified	2	10	0	0	2	10
Total	372	3,964	148	1,922	520	5,886

Table 3: IID outbreak summary by HSE area 2013

HSE area	Number of outbreaks	Outbreak rate per 100,000	Number ill	Number hospitalised	Number of deaths
HSE-E	66	4.1	1,580	401	0
HSE-M	35	12.4	121	11	0
HSE-MW	44	11.6	180	40	0
HSE-NE	17	3.9	144	28	1
HSE-NW	43	16.6	361	39	0
HSE-SE	54	10.9	590	21	2
HSE-S	48	7.2	461	8	2
HSE-W	58	13.0	445	71	0
HPSC	7	-	82	36	0
Total	372	8.1	3,964	655	5

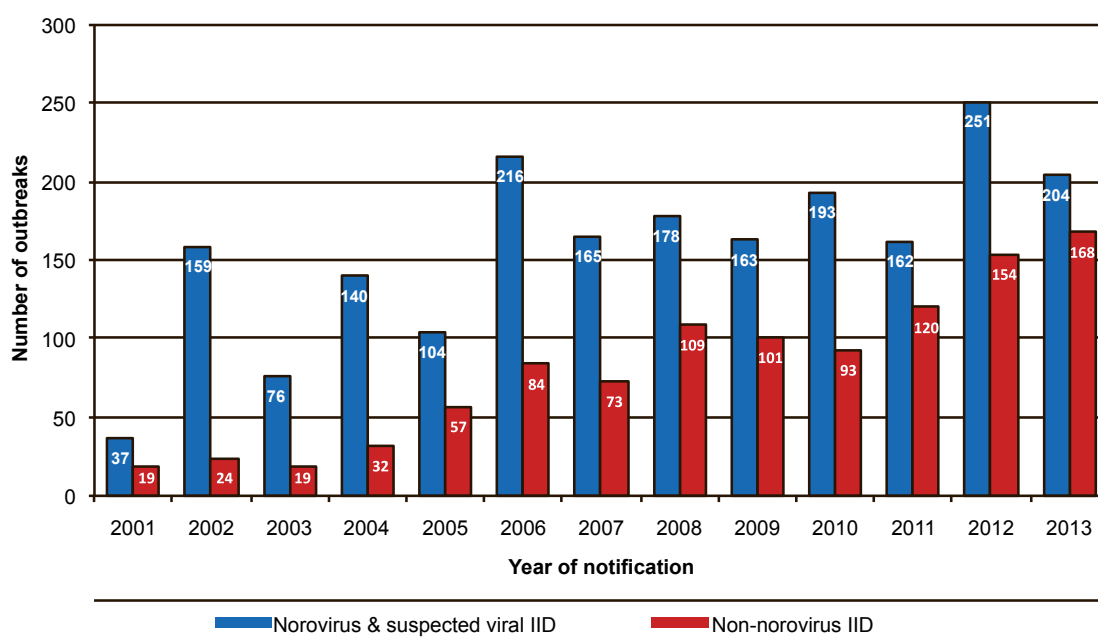


Figure 1: Number of norovirus/suspected viral outbreaks[§] and number of non-norovirus IID outbreaks by year, 2001-2013

[§] Includes all norovirus outbreaks and AIG outbreaks where organism was suspected norovirus, suspected viral or not specified

Table 4: Number of general and family IID outbreaks by disease, 2013

Outbreak disease/pathogen	Family outbreak		General outbreak		Total IID outbreaks	
	Number of outbreaks	Number ill	Number of outbreaks	Number ill	Number of outbreaks	Number ill
AIG (unspecified)	1	7	89	1,017	90	1,024
Campylobacter infection	6	14	1	2	7	16
C. difficile infection	0	0	5	28	5	28
Cryptosporidiosis	22	55	6	38	28	93
Giardiasis	2	4	0	0	2	4
Hepatitis A (acute)	2	5	4	35	6	40
Noroviral infection	4	151	110	2,310	114	2,461
Rotavirus infection	1	2	0	0	1	2
Salmonellosis	10	26	8	30	18	56
Shigellosis	3	8	1	9	4	17
VTEC infection	80	133	16	88	96	221
Yersiniosis	1	2	0	0	1	2
Total	132	407	240	3,557	372	3,964

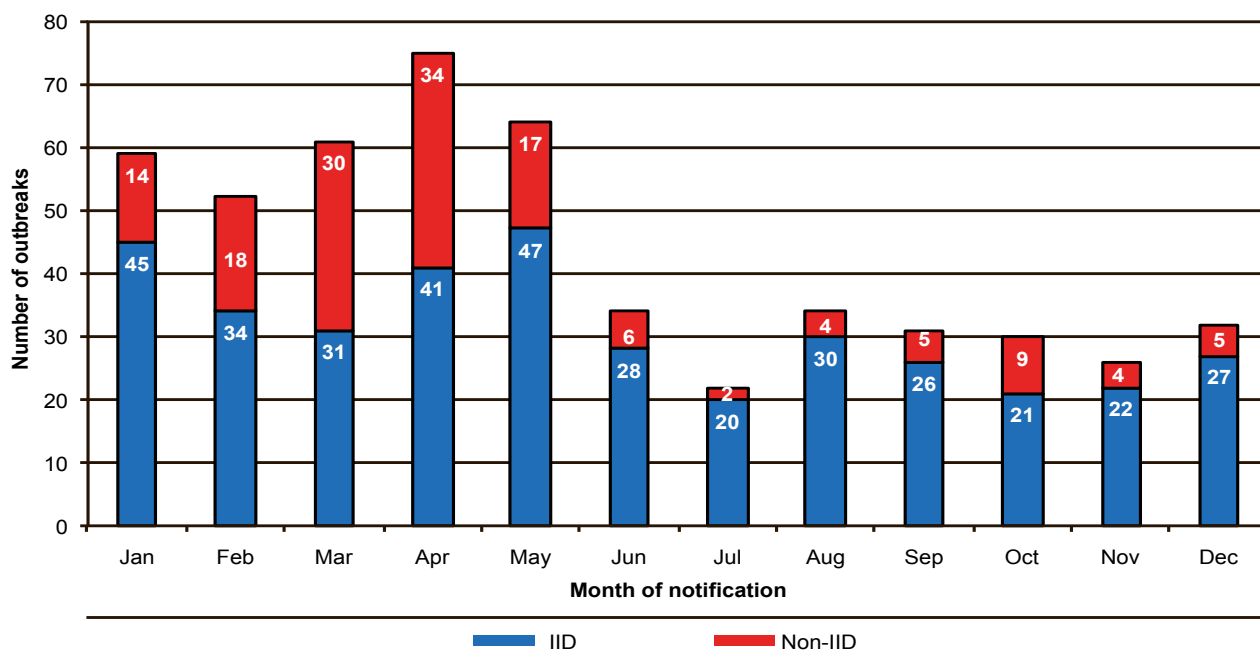


Figure 2: Number of IID and non-IID outbreaks by month of notification, 2013

Table 5: Non-IID outbreak summary by HSE area, 2013

HSE area	Number of outbreaks	Outbreak rate per 100,000	Number ill	Number hospitalised	Number of deaths
HSE-E	53	3.3	966	33	9
HSE-M	7	2.5	156	11	6
HSE-MW	8	2.1	42	21	0
HSE-NE	5	0.0	44	6	4
HSE-NW	24	9.3	199	19	0
HSE-SE	13	2.6	157	14	1
HSE-S	22	3.3	193	20	5
HSE-W	16	3.6	165	31	2
Total	148	3.2	1,922	155	27

Table 6: Number of family and general non-IID outbreaks by disease, 2013

Outbreak disease/pathogen	Family outbreak		General outbreak		Total Non-IID outbreaks	
	Number outbreaks	Number ill	Number outbreaks	Number ill	Number outbreaks	Number ill
Influenza	0	0	64	1,391	64	1,391
Tuberculosis	6	18	6	23	12	41
Pertussis	9	25	1	3	10	28
Influenza-like illness	0	0	10	126	10	126
Parvovirus/ suspected parvovirus	1	3	6	35	7	38
Mumps	2	4	3	7	5	11
Acute respiratory illness	0	0	5	44	5	44
Measles	2	4	2	29	4	33
Viral meningitis	2	4	2	6	4	10
Parainfluenza	0	0	4	48	4	48
Respiratory syncytial virus infection	2	4	1	15	3	19
Human metapneumovirus	0	0	3	65	3	65
ESBL <i>E. coli</i>	0	0	3	8	3	8
<i>Streptococcus</i> group A infection (invasive)	1	2	1	2	2	4
Suspected Scabies	0	0	2	14	2	14
<i>Pseudomonas/ P. aeruginosa</i>	0	0	2	2	2	2
Meningococcal disease	1	2	0	0	1	2
Malaria	1	5	0	0	1	5
Carbapenem-resistant Enterobacteriaceae infection (invasive)	0	0	1	2	1	2
CFR positive linezolid resistant <i>Staphylococcus epidermidis</i>	0	0	1	2	1	2
Varicella	0	0	1	8	1	8
Human metapneumovirus & parainfluenza	0	0	1	15	1	15
Hand foot and mouth disease	0	0	1	3	1	3
<i>Streptococcus</i> Group A	0	0	1	3	1	3
Total	27	71	121	1,851	148	1,922

The most frequently reported locations for IID outbreaks were private houses (n=119), community hospital/long stay facilities (n=62) and residential institutions (n=61). The most commonly reported outbreaks in private houses were VTEC (n=77) and cryptosporidiosis (n=22). In community hospital/long stay facilities the most commonly reported outbreaks were AIG (n=33) and norovirus infection (n=26). In residential institutions the most commonly reported outbreaks were norovirus (n=35) and AIG (n=26).

Person-to-person (P-P) spread[‡] was the most frequently reported mode of transmission implicated in IID outbreaks during 2013 (62.6%, n=233).

During 2013, the number of IID outbreaks peaked between March and May. This peak observed was mainly due to high numbers of norovirus/ suspected norovirus and VTEC outbreaks. Figure 2 illustrates the number of IID and non-IID outbreaks by month of notification during 2013.

Non-IID outbreaks:

During 2013, 148 outbreaks of non-IID diseases were reported, representing 28.5% of all outbreaks notified nationally. The most common non-IID outbreak diseases were influenza/ influenza-like illness (50.0%, n=74), tuberculosis (8.1%, n=12) and pertussis (6.8%, n=10). Table 5 details the regional distribution of non-IID

outbreaks while the number of general and family outbreaks of non-IID disease and numbers ill are outlined in Table 6.

The number of non-IID outbreaks peaked during March and April 2013. Both peaks were mainly due to influenza, influenza-like illness (ILI) and acute respiratory outbreaks (figure 2).

The most frequently reported locations for non-IID outbreaks were residential institutions (n=45), community hospital/long-stay units (n=39) and private houses (n=19), as shown in table 2. Non-IID outbreaks in these locations were most frequently caused by influenza/ILI, acute respiratory outbreaks and pertussis. Person-to-person (P-P) spread^{**} was the most frequently reported mode of transmission implicated in non-IID outbreaks during 2013 (73.0%, n=108).

The information gathered from outbreaks reported is used to inform public health professionals on the causes and factors contributing to outbreaks, to target prevention strategies and to monitor the effectiveness of prevention programmes. For further information on disease specific outbreaks, please refer to the individual disease chapter.

[‡]Including 40 IID outbreaks reported as person to person and airborne transmission and 8 reported as person-to-person and animal transmission.

^{**}Including 38 non-IID outbreaks reported as person to person and airborne transmission