

# 7. Outbreaks

## Summary

Number of outbreaks: 468  
 Number of IID outbreaks: 264  
 Number of non-IID outbreaks: 204

During 2009, 468 outbreaks of infectious diseases were reported with 7,769 associated cases of illness, including 590 (7.6%) cases hospitalised. In June 2009 the World Health Organization announced that the A(H1N1) influenza had become a global pandemic. This was characterised by extensive influenza activity in Ireland that increased the number of outbreaks (and outbreak cases of illness due to influenza) beyond levels seen in previous years.

Regional variation in all outbreaks was observed between HSE areas with the highest rate observed in HSE-NW at 28.7 per 100,000 population while the lowest rate was observed in HSE-MW at 6.1 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 72.9% (n= 341) of all outbreaks notified during 2009. The remaining outbreaks (27.1%, n= 127) 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 in 2009 (53.0%, n=248). Most of these outbreaks were due to norovirus and pandemic influenza A(H1N1).

Private houses were the most frequently reported outbreak location in 2009, accounting for 25.6% (n=120) of all outbreaks while schools were the second most common outbreak location, accounting for 19.7% (n=92) of all outbreaks. The highest numbers ill were reported from outbreaks in schools (n=2,526), hospitals (n=2,137) and residential institutions (n=1,088). Table 2 details the number of IID and non-IID outbreaks and numbers ill by outbreak location for outbreaks reported during 2009.

### Infectious intestinal disease (IID) outbreaks:

IID outbreaks accounted for 56.4% (n=264) of all outbreaks reported during 2009. This was a 6% decrease compared to the number of IID outbreaks reported during 2008 (n=281).

Table 1: Number of outbreaks and numbers ill by HSE area for all outbreaks, IID outbreaks and non-IID outbreaks (2009)

HSE area	Number of outbreaks	Outbreak rate per 100,000	Number ill	Number hospitalised	Number of IID outbreaks	Number of Non-IID outbreaks
HSE-E	124	8.3	3,190	126	66	58
HSE-M	31	12.3	263	36	23	8
HSE-MW	22	6.1	182	36	14	8
HSE-NE	55	14.0	956	138	27	28
HSE-NW	68	28.7	866	87	45	23
HSE-SE	45	9.8	680	37	28	17
HSE-S	74	11.9	820	38	35	39
HSE-W	47	11.3	781	79	24	23
HPSC	2	-	31	13	2	0
<b>Total</b>	<b>468</b>	<b>11.0</b>	<b>7,769</b>	<b>590</b>	<b>264</b>	<b>204</b>

Norovirus/ suspect viral outbreaks, accounted for 48.1% of all IID outbreaks reported in 2009. Norovirus was also responsible for the two largest outbreaks during 2009. Both occurred in hospitals with 717 and 576 cases of illness respectively. Figure 1 compares norovirus/suspect viral outbreaks with non-norovirus IID outbreaks by year from 2001 to 2009. 2009 was the first year where less norovirus/suspect viral outbreaks were reported than other IID outbreaks.

After norovirus (n=115), the next most commonly reported IID outbreaks during 2009 were acute infectious gastroenteritis (n=68), Enterohaemorrhagic

*E. coli* (n=42), salmonellosis (n=15) and campylobacter (n=9). The number of general and family outbreaks of IID disease and numbers ill, are outlined in Table 3.

The most frequently reported locations for IID outbreaks were private houses (n=69), residential institutions (n=54) and hospitals (n=49). The most commonly reported outbreaks in private homes were of EHEC (n=36), *Campylobacter* (n=9) and *Salmonella* (n=9). In residential institutions the most commonly reported outbreak were of norovirus/suspected norovirus (n=40) while in hospitals the most commonly reported outbreaks were also of norovirus/ suspected norovirus (n=38) and of *C. difficile* (n=6).

Table 2: Number of IID and non-IID outbreaks and numbers ill by outbreak location, 2009

Outbreak location	IID		Non-IID		Total outbreaks	
	Number of outbreaks	Number ill	Number of outbreaks	Number ill	Number of outbreaks	Number ill
Private house	69	185	51	143	120	328
School	4	144	88	2,382	92	2,526
Residential institution	54	915	16	173	70	1,088
Hospital	49	2,127	3	10	52	2,137
Comm. Hosp/Long-stay unit	40	686	2	10	42	696
Other	12	87	8	58	20	145
Crèche	9	70	8	56	17	126
University/College	0	0	13	249	13	249
Hotel	8	169	1	3	9	172
Community outbreak	6	87	3	48	9	135
Travel related	4	10	3	11	7	21
Extended family	3	8	4	55	7	63
Workplace	1	5	2	33	3	38
Coach tour	2	14	0	0	2	14
Unknown	1	11	1	2	2	13
Guest house / B and B	1	9	0	0	1	9
Restaurant / Cafe	1	5	0	0	1	5
Public house	0	0	1	4	1	4
<b>Total</b>	<b>264</b>	<b>4,532</b>	<b>204</b>	<b>3,237</b>	<b>468</b>	<b>7,769</b>

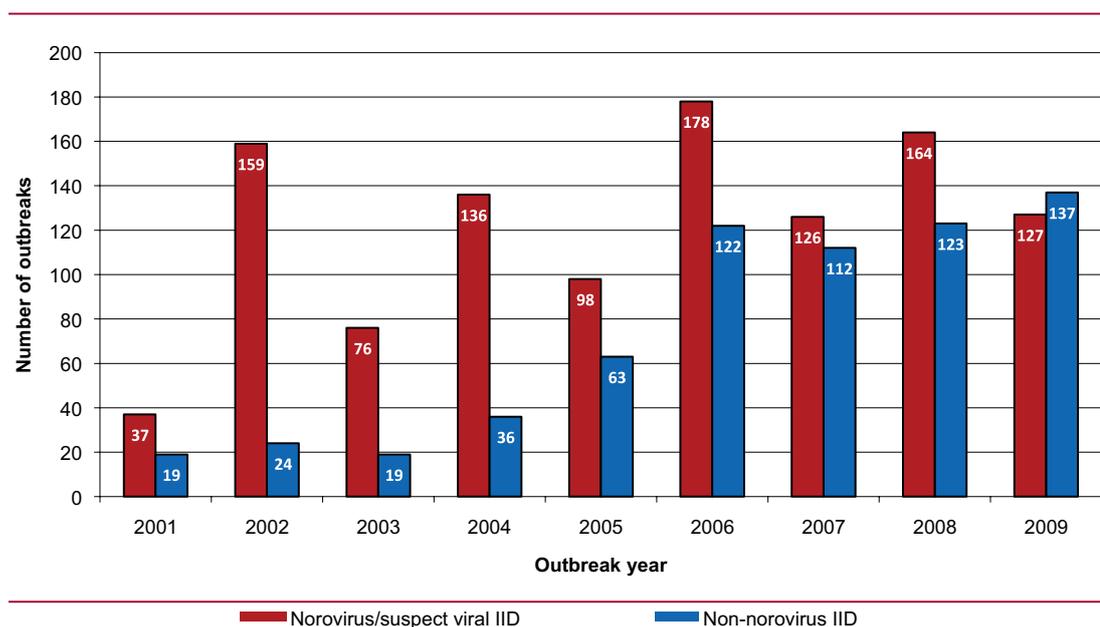


Figure 1: Number of norovirus/suspect viral outbreaks and number of non-norovirus IID outbreaks by year, 2001-2009

Person-to-person (P-P) spread was the most frequently reported mode of transmission implicated in IID outbreaks during 2009 (54.9%, n=248). The second most frequently reported transmission mode was P-P and airborne (9.5, n=25).

The number of IID outbreaks peaked during the first three months of 2009. This peak is due to high numbers of norovirus outbreaks, with 30 norovirus outbreaks reported during January, 28 during February and 22 during March. This seasonal variation has been observed in previous years. Figure 2 illustrates the number of IID and non-IID outbreaks by month of notification during 2009.

### Non-IID outbreaks:

During 2009, 204 outbreaks of non-IID diseases were reported, which was more than double the number of

non-IID outbreaks reported during 2008 (n=99). This increase was due to the high numbers of outbreaks of pandemic influenza A(H1N1) and influenza-like illness (ILI) which accounted for 54.4% (n=111) and 16.2% (n=33) of all non-IID outbreaks reported respectively. The third most common non-IID outbreak was mumps accounting for 15.7% (n=32) of all non-IID outbreaks reported. The number of general and family outbreaks of non-IID disease and numbers ill are outlined in Table 4.

During 2009, the number of non-IID outbreaks peaked during September and October with 30 and 72 outbreaks reported respectively (figure 2). This peak was due to high numbers of outbreaks of pandemic influenza (AH1N1) and ILI reported, with 29 outbreaks of pandemic influenza (AH1N1)/ILI reported during September and 71 during October. The most frequently

Table 3: Number of general and family IID outbreaks by disease, 2009

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
Acute infectious gastroenteritis	6	38	62	777	68	815
Campylobacter infection	9	33	0	0	9	33
Clostridium perfringens (type A) food-borne disease	1	11	0	0	1	11
Cryptosporidiosis	5	14	1	3	6	17
Enterohaemorrhagic E. coli (EHEC)	36	78	6	16	42	94
Giardiasis	0	0	1	3	1	3
Hepatitis A (acute)	1	2	2	17	3	19
Noroviral infection	1	10	114	3,424	115	3,434
Paratyphoid	1	2	0	0	1	2
Salmonellosis	12	27	3	66	15	93
Shigellosis	2	8	1	3	3	11
<b>Total</b>	<b>74</b>	<b>223</b>	<b>190</b>	<b>4,309</b>	<b>264</b>	<b>4,532</b>

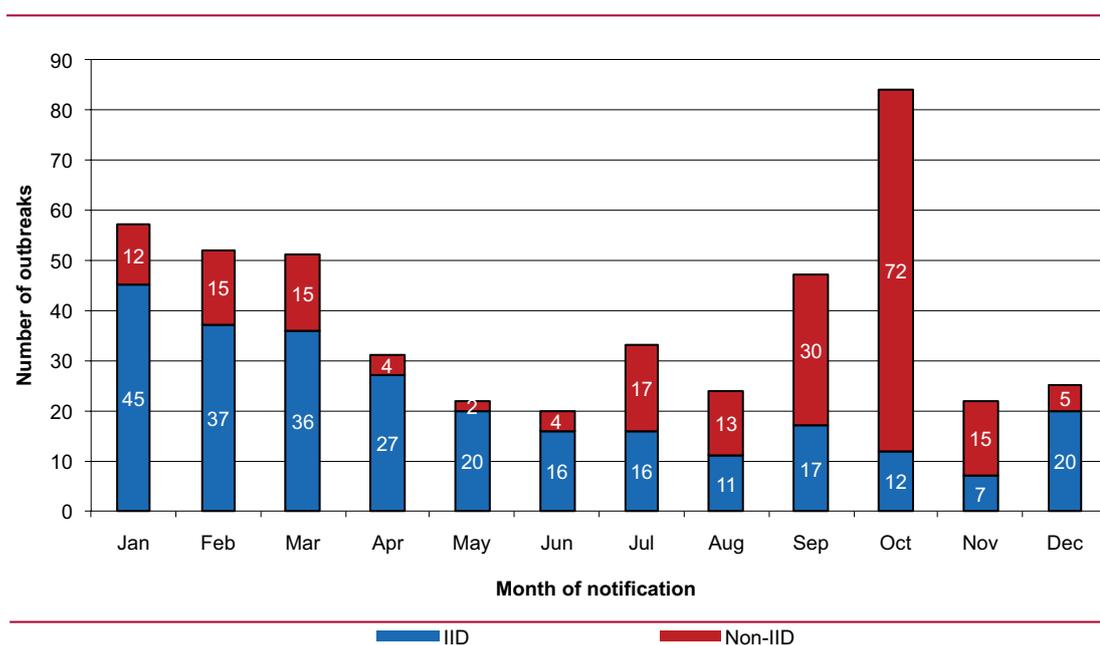


Figure 2: Number of IID and non-IID outbreaks by month of notification, 2009

reported locations for non-IID outbreaks were schools (n=88), private houses (n=51), residential institutions (n=16) and university/college (n=13). Non-IID outbreaks in these locations were most frequently caused by pandemic influenza A(1N1)/ILI and mumps (table 2) .

Person-to-person (P-P) spread was the most frequently reported mode of transmission implicated in non-IID outbreaks during 2009 (50.5%, n=103). The second most frequently reported transmission mode was P-P and airborne (29.4%, n=60).

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.

Table 4: Number of family and general non-IID outbreaks by disease, 2009

Outbreak disease/pathogen	Family outbreak		General outbreak		Total Non-IID outbreaks	
	Number outbreaks	Numbers ill	Number outbreaks	Numbers ill	Number outbreaks	Numbers ill
Pandemic influenza A(H1N1)	34	97	77	2,011	111	2,108
Influenza-like illness	0	0	33	585	33	585
Mumps	13	37	19	243	32	280
Measles	4	11	4	94	8	105
Influenza	0	0	3	44	3	44
Coronavirus	0	0	1	30	1	30
Scabies	0	0	1	20	1	20
Varicella	0	0	2	9	2	9
ESBL	0	0	2	9	2	9
Chickenpox	0	0	2	9	2	9
Scarlet fever	0	0	1	8	1	8
Tinea	0	0	1	7	1	7
Possible rubella	0	0	1	6	1	6
<i>Mycobacterium tuberculosis</i>	0	0	1	5	1	5
Rubella-like illness	1	3	0	0	1	3
Suspected <i>Streptococcus pyogenes</i>	0	0	1	3	1	3
MRSA	0	0	1	2	1	2
Hepatitis B (acute and chronic)	0	0	1	2	1	2
Legionellosis	1	2	0	0	1	2
<b>Total</b>	<b>53</b>	<b>150</b>	<b>151</b>	<b>3,087</b>	<b>204</b>	<b>3,237</b>