

07

Infectious Disease Outbreaks

7. Outbreaks

Summary

Number of outbreaks: 518
 Number of IID outbreaks: 405
 Number of non-IID outbreaks: 113

During 2012, 518 outbreaks of infectious diseases were reported with 6,622 associated cases of illness, including 1,473 (22.2%) cases hospitalised and 20 deaths.* Regional variation in outbreaks was observed between HSE areas with the highest rates observed in HSE-NW (22.5/100,000 population) and HSE-M (17.4/100,000 population) while the lowest rate was observed in HSE-MW at 8.7 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 65.4% (n= 339) of all outbreaks notified during 2012. The remaining outbreaks (34.6%, n= 179) 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 2012

(68.9%, n=357). Most of these outbreaks were due to norovirus, acute infectious gastroenteritis (AIG), pertussis and verotoxigenic *E. coli* (VTEC).

The most frequently reported outbreak locations in 2012 were private houses (n=161, 31.1%), residential institutions (n=110, 21.2%) and community hospital/long-stay units (n=90, 17.4%). The highest numbers ill were reported from outbreaks in hospitals (n=1,978), residential institutions (n=1,790) and community hospital/long-stay units (n=1,534). Table 2 details the number of IID and non-IID outbreaks and numbers ill by outbreak location for outbreaks reported during 2012.

Infectious intestinal disease (IID) outbreaks:

During 2012, 405 IID outbreaks were reported, which was an increase of 43.6% compared to the number of IID outbreaks reported during 2011 (n=282). However, the percentage of IID outbreaks as a proportion of total outbreaks remained stable at 78.2% when compared to recent years (74.4% in 2011 and 77.7% in 2010). The Table 3 details the regional distribution of outbreaks of infectious intestinal disease (IID) during 2012.

Table 1: Number of outbreaks by HSE area, 2012

| 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 | 162 | 10.0 | 3,284 | 934 | 1 | 112 | 50 |
| HSE-M | 49 | 17.4 | 435 | 21 | 0 | 42 | 7 |
| HSE-MW | 33 | 8.7 | 262 | 117 | 1 | 28 | 5 |
| HSE-NE | 43 | 9.8 | 469 | 42 | 2 | 38 | 5 |
| HSE-NW | 58 | 22.5 | 633 | 139 | 8 | 46 | 12 |
| HSE-SE | 50 | 10.0 | 647 | 11 | 1 | 40 | 10 |
| HSE-S | 62 | 9.3 | 413 | 21 | 4 | 47 | 15 |
| HSE-W | 60 | 13.5 | 452 | 182 | 3 | 51 | 9 |
| HPSC | 1 | - | 27 | 6 | 0 | 1 | 0 |
| Total | 518 | 11.3 | 6,622 | 1473 | 20 | 405 | 113 |

*Outbreak data extracted from CIDR on 07/08/2013.

[†]Including 87 outbreaks reported as person to person and airborne transmission and 2 person-to-person and animal contact

Table 2: Number of IID and non-IID outbreaks and number ill by outbreak location, 2012

| 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 | 75 | 1,312 | 15 | 222 | 90 | 1,534 |
| Community outbreak | 9 | 99 | 5 | 63 | 14 | 162 |
| Crèche | 9 | 88 | 7 | 57 | 16 | 145 |
| Extended family | 5 | 26 | 4 | 13 | 9 | 39 |
| Guest house / B & B | 1 | 1 | 0 | 0 | 1 | 1 |
| Hospital | 60 | 1,879 | 8 | 99 | 68 | 1,978 |
| Hotel | 11 | 249 | 0 | 0 | 11 | 249 |
| Other | 5 | 60 | 7 | 41 | 12 | 101 |
| Private house | 112 | 235 | 49 | 133 | 161 | 368 |
| Residential institution | 99 | 1,531 | 11 | 259 | 110 | 1,790 |
| Restaurant / Cafe | 3 | 38 | 0 | 0 | 3 | 38 |
| School | 2 | 42 | 7 | 116 | 9 | 158 |
| Travel related | 5 | 28 | 0 | 0 | 5 | 28 |
| University/College | 1 | 6 | 0 | 0 | 1 | 6 |
| Unknown | 2 | 4 | 0 | 0 | 2 | 4 |
| Not Specified | 6 | 21 | 0 | 0 | 6 | 21 |
| Total | 405 | 5,619 | 113 | 1,003 | 518 | 6,622 |

Table 3: IID outbreak summary by HSE area 2012

| HSE area | Number of outbreaks | Outbreak rate per 100,000 | Number ill | Number hospitalised | Number of deaths |
|--------------|---------------------|---------------------------|--------------|---------------------|------------------|
| HSE-E | 112 | 6.9 | 2,890 | 866 | 0 |
| HSE-M | 42 | 14.9 | 367 | 18 | 0 |
| HSE-MW | 28 | 7.4 | 246 | 105 | 1 |
| HSE-NE | 38 | 8.6 | 397 | 34 | 0 |
| HSE-NW | 46 | 17.8 | 447 | 122 | 1 |
| HSE-SE | 40 | 8.0 | 612 | 7 | 0 |
| HSE-S | 47 | 7.1 | 269 | 7 | 0 |
| HSE-W | 51 | 11.5 | 364 | 165 | 0 |
| HPSC | 1 | - | 27 | 6 | 0 |
| Total | 405 | 8.8 | 5,619 | 1,330 | 2 |

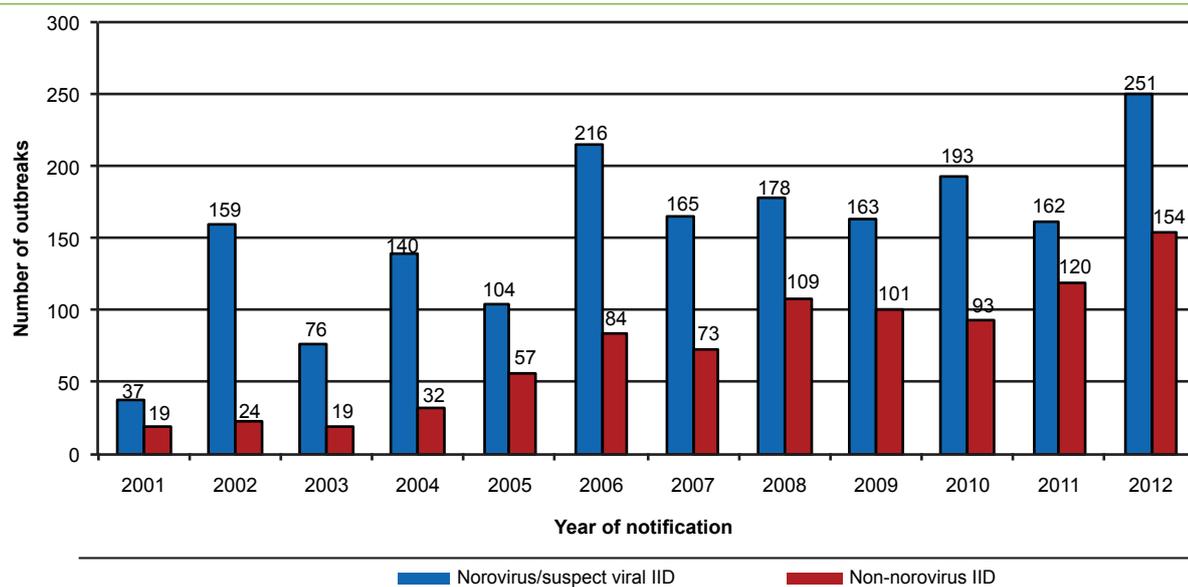


Figure 1: Number of norovirus/suspected viral outbreaks[§] and number of non-norovirus IID outbreaks by year, 2001-2012

[§] 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, 2012

| 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 | 2 | 22 | 85 | 1,000 | 87 | 1,022 |
| Campylobacter infection | 4 | 13 | 0 | 0 | 4 | 13 |
| C. difficile infection | 0 | 0 | 7 | 40 | 7 | 40 |
| Cryptosporidiosis | 21 | 51 | 3 | 19 | 24 | 70 |
| Food poisoning (bacterial other than salmonella) | 0 | 0 | 1 | 9 | 1 | 9 |
| Hepatitis A (acute) | 2 | 4 | 0 | 0 | 2 | 4 |
| Listeriosis | 1 | 2 | 0 | 0 | 1 | 2 |
| Noroviral infection | 2 | 7 | 162 | 4,108 | 164 | 4,115 |
| Rotavirus infection | 9 | 16 | | | 9 | 16 |
| Salmonellosis | 4 | 9 | 2 | 30 | 6 | 39 |
| Shigellosis | 1 | 3 | 0 | 0 | 1 | 3 |
| Typhoid | 2 | 3 | 0 | 0 | 2 | 3 |
| VTEC | 80 | 157 | 17 | 126 | 97 | 283 |
| Total | 128 | 287 | 277 | 5,332 | 405 | 5,619 |

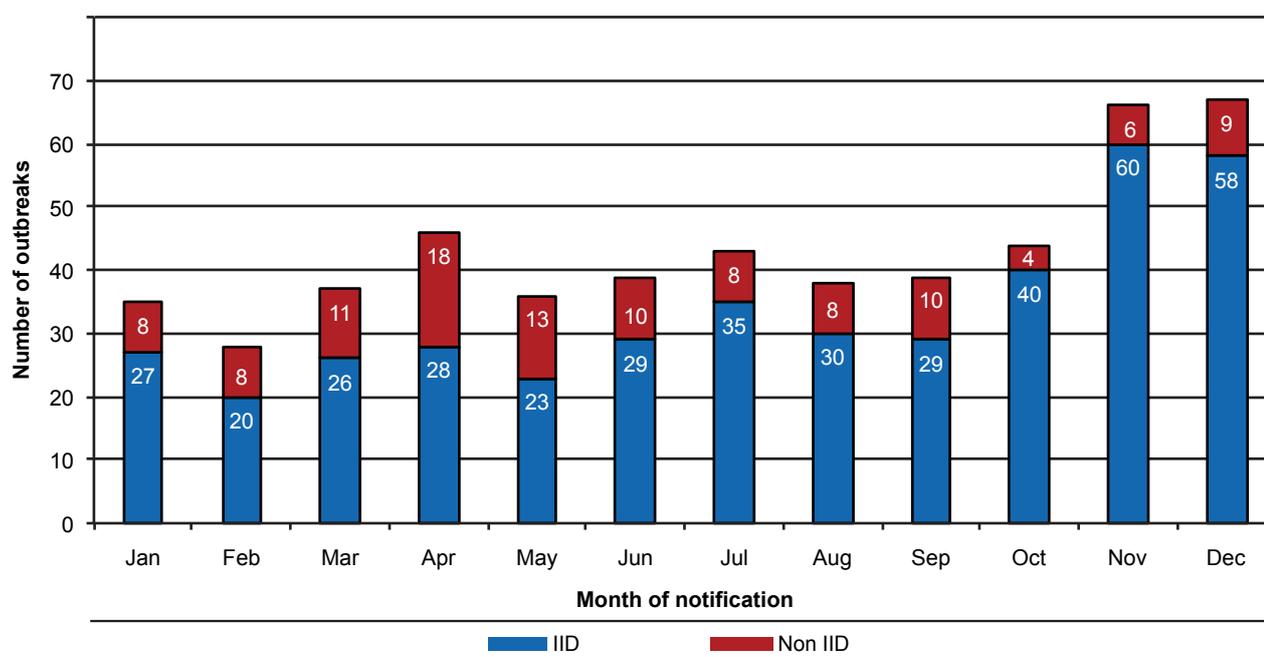


Figure 2: Number of IID and non-IID outbreaks by month of notification, 2012

Table 5: Non-IID outbreak summary by HSE area, 2012

| HSE area | Number of outbreaks | Outbreak rate per 100,000 | Number ill | Number hospitalised | Number of deaths |
|--------------|---------------------|---------------------------|--------------|---------------------|------------------|
| HSE-E | 50 | 3.1 | 394 | 68 | 1 |
| HSE-M | 7 | 2.5 | 68 | 3 | 0 |
| HSE-MW | 5 | 1.3 | 16 | 12 | 0 |
| HSE-NE | 5 | 0.0 | 72 | 8 | 2 |
| HSE-NW | 12 | 4.6 | 186 | 17 | 7 |
| HSE-SE | 10 | 2.0 | 35 | 4 | 1 |
| HSE-S | 15 | 2.3 | 144 | 14 | 4 |
| HSE-W | 9 | 2.0 | 88 | 17 | 3 |
| Total | 113 | 2.5 | 1,003 | 143 | 18 |

Norovirus/ suspected viral outbreaks, accounted for 62.0% of all IID outbreaks reported in 2012. Figure 1 compares norovirus/ suspected viral outbreaks with non-norovirus IID outbreaks by year from 2001 to 2012. Norovirus/ suspected norovirus was also responsible for the seven largest outbreaks during 2012. Numbers ill ranged from two cases to 336 cases. This was the highest number of norovirus/ suspected norovirus outbreaks reported since outbreak surveillance was initiated in Ireland in 2001.

After noroviral infection (n=164), the next most commonly reported IID outbreaks during 2012 were VTEC (n=97), AIG (n=87), and cryptosporidiosis (n=24). The number of general and family outbreaks of IID and numbers ill, are outlined in Table 4.

The most frequently reported locations for IID outbreaks were private houses (n=112), residential institutions (n=99) and community hospital/long stay facilities (n=75). The most commonly reported outbreak in private houses was VTEC (n=72) and cryptosporidiosis (n=20). In community hospital/long

stay facilities the most commonly reported outbreaks were of noroviral infection (n=42) and AIG (n=33). In residential institutions the most commonly reported outbreaks were of norovirus (n=60) and AIG (n=37).

Person-to-person (P-P) spread[‡] was the most frequently reported mode of transmission implicated in IID outbreaks during 2012 (64.4%, n=261).

In 2012, the number of IID outbreaks peaked during November and December. This peak was mainly due to high numbers of norovirus/ suspected norovirus outbreaks, with 51 norovirus/ suspected norovirus outbreaks reported during November and 54 during December. Figure 2 illustrates the number of IID and non-IID outbreaks by month of notification during 2012.

Non-IID outbreaks:

During 2012, 113 outbreaks of non-IID diseases were reported, representing 21.8% of all outbreaks notified nationally. The most common non-IID outbreak diseases were pertussis (36.3%, n=41) and influenza (16.8%, n=19). Table 5 details the regional distribution of non-

Table 6: Number of family and general non-IID outbreaks by disease, 2012

| Outbreak disease/pathogen | Family outbreak | | General outbreak | | Total Non-IID outbreaks | |
|--|------------------|------------|------------------|------------|-------------------------|-------------|
| | Number outbreaks | Number ill | Number outbreaks | Number ill | Number outbreaks | Number ill |
| Pertussis | 38 | 100 | 3 | 57 | 41 | 157 |
| Influenza | 0 | 0 | 19 | 402 | 19 | 402 |
| Tuberculosis | 4 | 12 | 3 | 11 | 7 | 23 |
| Respiratory Illness | 0 | 0 | 6 | 61 | 6 | 61 |
| Measles | 0 | 0 | 3 | 68 | 3 | 68 |
| Viral meningitis | 2 | 4 | 1 | 3 | 3 | 7 |
| Suspected pertussis | 3 | 7 | 0 | 0 | 3 | 7 |
| Hand foot and mouth disease (HFMD)/ suspected HFMD | 0 | 0 | 3 | 22 | 3 | 22 |
| Hepatitis B (acute and chronic) | 1 | 6 | 1 | 1 | 2 | 7 |
| Mumps | 1 | 2 | 1 | 5 | 2 | 7 |
| Respiratory syncytial virus infection | 0 | 0 | 2 | 14 | 2 | 14 |
| Human metapneumovirus | 0 | 0 | 2 | 67 | 2 | 67 |
| MRSA | 0 | 0 | 2 | 12 | 2 | 12 |
| Scarlet fever | 0 | 0 | 2 | 20 | 2 | 20 |
| Parvovirus B19/ suspected parvovirus B19 | 0 | 0 | 2 | 8 | 2 | 8 |
| Scabies/ suspected scabies | 0 | 0 | 2 | 17 | 2 | 17 |
| Hepatitis C | 1 | 2 | 0 | 0 | 1 | 2 |
| <i>Streptococcus</i> group A infection (invasive) | 1 | 3 | 0 | 0 | 1 | 3 |
| Syphilis | 0 | 0 | 1 | 4 | 1 | 4 |
| Acute respiratory illness | 0 | 0 | 1 | 17 | 1 | 17 |
| Coxsackievirus | 0 | 0 | 1 | 11 | 1 | 11 |
| Influenza-like illness | 0 | 0 | 1 | 13 | 1 | 13 |
| Linezolid resistant VRE | 0 | 0 | 1 | 6 | 1 | 6 |
| <i>Neisseria gonorrhoeae</i> | 0 | 0 | 1 | 4 | 1 | 4 |
| Parvovirus B20 | 0 | 0 | 1 | 6 | 1 | 6 |
| <i>Streptococcus</i> Group A | 0 | 0 | 1 | 3 | 1 | 3 |
| Suspected parvovirus | 0 | 0 | 1 | 12 | 1 | 12 |
| Varicella chickenpox | 0 | 0 | 1 | 23 | 1 | 23 |
| Total | 51 | 136 | 62 | 867 | 113 | 1003 |

[‡]Including 63 IID outbreaks reported as person to person and airborne transmission and 2 reported as person-to-person and animal transmission.

**Including 24 non-IID outbreaks reported as person to person and airborne transmission

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 April and May 2012. The April peak was mainly due to influenza, influenza-like illness (ILI) and acute respiratory outbreaks while the May peak was due to high numbers of pertussis outbreaks reported (figure 2).

The most frequently reported locations for non-IID outbreaks were private houses (n=49), Comm. Hosp/ Long-stay units (n=15) and residential institutions (n=11) as shown in table 2. Non-IID outbreaks in these locations were most frequently caused by pertussis, influenza and ILI. Person-to-person (P-P) spread** was the most frequently reported mode of transmission implicated in non-IID outbreaks during 2012 (85.0%, n=96).

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.