

# 7. Outbreaks

## Summary

Number of outbreaks: 549  
 Number of IID outbreaks: 393  
 Number of non-IID outbreaks: 158

During 2016, 549 outbreaks of infectious diseases were reported with 6,937\* associated cases of illness, including 411 (5.9%) cases hospitalised and 23 deaths.†Regional variation in the numbers of outbreaks reported was observed between HSE areas. The highest outbreak reporting rates‡ were observed in HSE-NW (25.3/100,000 population) while the lowest rate was observed in HSE-E at (5.9) and -NE (8.5). Table 1 details the regional distribution of all outbreaks by HSE area and disease.

The number of outbreaks reported peaked in December. This peak was mainly due to high numbers of influenza, norovirus and acute infectious gastroenteritis (AIG) outbreaks. A secondary peak was also observed earlier in the year during April. This peak was mainly due to norovirus, verotoxigenic *E. coli* infection (VTEC) and AIG outbreaks. Figure 1 illustrates the number of IID and non-IID outbreaks by month of notification during 2016.

Similar to previous years, airborne/person-to-person spread was reported as the mode of transmission for the majority of outbreaks (68.9%, n=378). Mode of transmission was reported as unknown for 21.1% of outbreaks. Table 2 details all outbreaks by infectious disease and probable mode of transmission.

The most frequently reported outbreak locations were private houses (n=155, 28.2%), nursing homes (n=99, 18.0%), hospitals (n=85, 15.5%) and community hospital/long-stay units (n=79, 14.4%). The highest numbers ill were reported from outbreaks in nursing homes (n=1,595), hospitals (n=1,342) and hotels (n=1,017). However it should be noted that a single hotel outbreak during 2016 resulted in 896 of the hotel associated cases.

General outbreaks accounted for 69.2% (n=380) of all outbreaks notified during 2016. The remaining outbreaks (30.8%, n=169) were reported as family/household outbreaks.

\* Two norovirus outbreaks did not report the number ill or number of associated laboratory confirmed cases. Three outbreaks reported zero symptomatic cases and consisted of laboratory confirmed asymptomatic individuals.

† Outbreak data extracted from CIDR on 10/08/2017.

‡ All rates are calculated per 100,000 population as per Census 2016

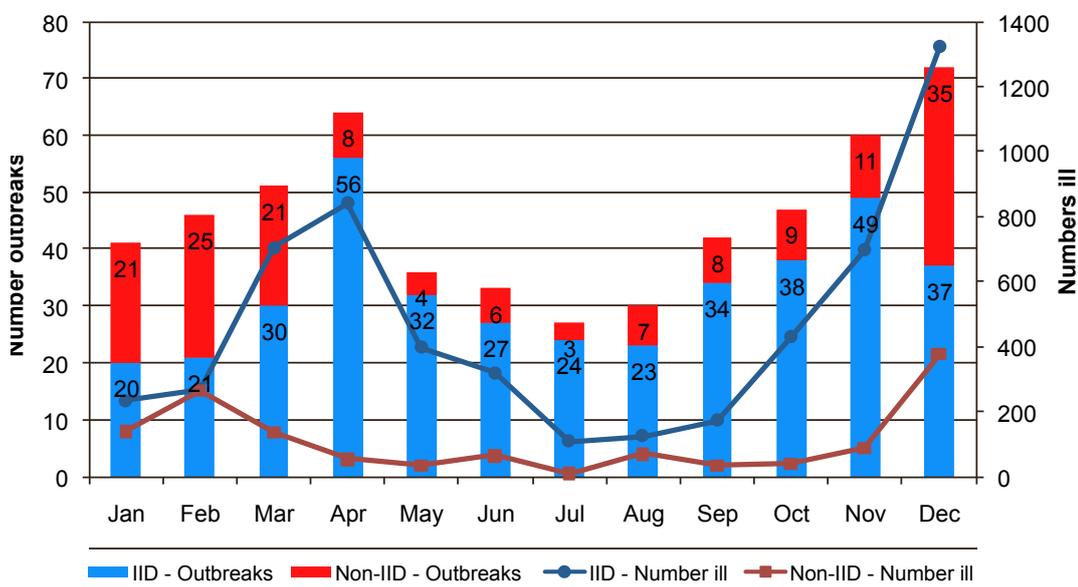


Figure 1: Number of IID and non-IID outbreaks by month of notification and associated numbers ill, 2016

Table 1 Number of IID and non-IID outbreaks by disease and HSE area, 2016

<b>IID/ Non-IID</b>	<b>Disease</b>	<b>HSE-E</b>	<b>HSE-M</b>	<b>HSE-MW</b>	<b>HPSC</b>	<b>HSE-NE</b>	<b>HSE-NW</b>	<b>HSE-SE</b>	<b>HSE-S</b>	<b>HSE-W</b>	<b>Total</b>
<b>IID</b>	AIG	12	3	3		8	19	18	18	13	<b>94</b>
	C. difficile			2		3				2	<b>7</b>
	Campylobacteriosis					1				3	<b>4</b>
	Cryptosporidiosis	1	2	1		1	4	5	2	4	<b>20</b>
	Giardiasis	5						4	1		<b>10</b>
	Hepatitis A (acute)	3	1			1		1	1	1	<b>8</b>
	Noroviral infection	26	11	11		10	13	14	33	13	<b>131</b>
	Rotavirus	1				3	2		1		<b>7</b>
	Salmonellosis	2		3		1		2		1	<b>9</b>
	Shigellosis	1			1						<b>2</b>
	Typhoid								1		<b>1</b>
VTEC	7	30	13	1	4	5	10	17	11	<b>98</b>	
<b>Non-IID</b>	Acinetobacter					1					<b>1</b>
	ARI	5					6	3	11	1	<b>26</b>
	Chickenpox	1							1		<b>2</b>
	CPE							1			<b>1</b>
	CRE	1					1	1		1	<b>4</b>
	Gonorrhoea			1			1				<b>2</b>
	Hand, foot and mouth								1		<b>1</b>
	Hepatitis B (acute and chronic)	1									<b>1</b>
	Impetigo								1		<b>1</b>
	Influenza	18	1	8		4	7	9	13	5	<b>65</b>
	Lymphogranuloma venereum	1									<b>1</b>
	Malaria		1								<b>1</b>
	Measles				1					1	<b>2</b>
	Meningococcal disease							1			<b>1</b>
	MRSA		1	1				1		1	<b>4</b>
	Mumps	2		1				2	3	2	<b>10</b>
	Pertussis	8		1					2	1	<b>12</b>
	RSV	2					1	2	1	4	<b>10</b>
Scabies						1		1	2	<b>4</b>	
Tuberculosis	1						1		1	2	<b>5</b>
VRE	3							1		<b>4</b>	
<b>Total number of outbreaks</b>		<b>101</b>	<b>50</b>	<b>45</b>	<b>3</b>	<b>39</b>	<b>65</b>	<b>76</b>	<b>112</b>	<b>58</b>	<b>549</b>
<b>Crude outbreak incidence rate</b>		<b>5.9</b>	<b>17.1</b>	<b>11.7</b>	<b>n/a</b>	<b>8.5</b>	<b>25.3</b>	<b>14.9</b>	<b>16.2</b>	<b>12.8</b>	<b>11.5</b>

Table 2: Number of IID and non-IID outbreaks by disease and probable route of transmission, 2016

IID/Non-IID	Disease	Transmission						Total
		P-P / Airborne	Animal contact	Food-borne	Water-borne	Unknown	Other	
IID	AIG	77		4		13		94
	<i>C. difficile</i>	5				1	1	7
	Campylobacteriosis	1		2		1		4
	Cryptosporidiosis	4	7		2	7		20
	Giardiasis	1				8	1	10
	Hepatitis A (acute)	3				5		8
	Noroviral infection	108				23		131
	Rotavirus	6				1		7
	Salmonellosis	3	2	3		1		9
	Shigellosis	1		1				2
	Typhoid			1				1
	VTEC	33	9	3	11	38	4	98
Non-IID	Acinetobacter					1		1
	ARI	24				2		26
	Chickenpox	2						2
	CPE						1	1
	CRE	1				2	1	4
	Gonorrhoea	2						2
	Hand, foot and mouth	1						1
	Hepatitis B					1		1
	Impetigo	1						1
	Influenza	59				6		65
	Lymphogranuloma venereum	1						1
	Malaria						1	1
	Measles	2						2
	Meningococcal disease	1						1
	MRSA	2				1	1	4
	Mumps	10						10
	Pertussis	10				2		12
	RSV	10						10
Scabies	4						4	
Tuberculosis	5						5	
VRE	1				3		4	
Total		378	18	14	13	116	10	549
% outbreaks		68.9	3.3	2.6	2.4	21.1	1.8	100.0

### Infectious intestinal disease (IID) outbreaks

During 2016, 391 IID outbreaks were reported, accounting for 71.2% of all outbreaks. This was an increase of 24.1% compared to the number of reported during 2015 (n=315). After norovirus, the next most commonly reported IID outbreaks were VTEC and AIG. Table 3 details the total number ill by disease and the median number ill per outbreak for disease where five or more outbreaks were reported.

### Non-infectious intestinal disease (Non-IID) outbreaks

During 2016, 158 non-IID outbreaks were reported, accounting for 28.8% of all outbreaks. This represents a decrease of 18.1% compared to the number reported during 2015 (n=193). After influenza, the next most commonly reported non-IID outbreaks were acute respiratory infections.

Table 3: Outbreak disease<sup>§</sup> by size of outbreak, 2016

IID/Non-IID	Disease	Number of outbreaks	Total number ill	Mean number ill	Median number ill	Range
IID	Noroviral infection	131	3724	28.9	16	1 - 896
	VTEC	98	230	2.3	2	0 - 16
	AIG	94	1424	15.1	7.5	1 - 338
	Cryptosporidiosis	20	53	2.7	2	2 - 5
	Giardiasis	10	29	2.9	2.5	1 - 5
	Salmonellosis	9	24	2.7	2	2 - 6
	Hepatitis A (acute)	8	22	2.8	2	2 - 5
	Rotavirus	7	55	7.9	7	2 - 18
Non-IID	<i>C. difficile</i>	7	29	4.1	3	2 - 9
	Influenza	65	700	10.8	9	2 - 36
	ARI	26	214	8.2	6.5	3 - 24
	Pertussis	12	31	2.6	2	2 - 6
	Mumps	10	58	5.8	2	2 - 31
	RSV	10	85	8.5	8.5	2 - 21
	Tuberculosis	5	19	3.8	3	3 - 6

<sup>§</sup> Values shown for diseases with more than five outbreaks.