3.8 Shigellosis

Summary

Number of notifications: 90
Crude incidence rate: 2.0/100,000

Ninety cases of shigellosis were notified in Ireland in 2015, corresponding to a crude incidence rate (CIR) of 2.0 per 100,000. This represents an increase of 58% compared to 2014. Of 85 cases where hospitalisation status was recorded, 17 (20%) were reported as hospital in-patients. Of the 90 cases, 87 were laboratory confirmed.

During 2015, there was an excess of male cases compared to females, with a male to female ratio of 2.1:1.0. This trend has been observed since 2009 with the exception of 2013 where more females were notified (figure 1). During 2015, cases ranged in age from 1 month to 95 years (median age=34 years). The male to female ratio was highest in the age groups 15-24 years (3.0:1.0), 25-34 years (3.2:1.0) and 35-44 years (3.0:1.0). Of the 26 cases that were reported as indigenous, 76.9% were male which compares to 53.3% of travel associated cases (table 1).

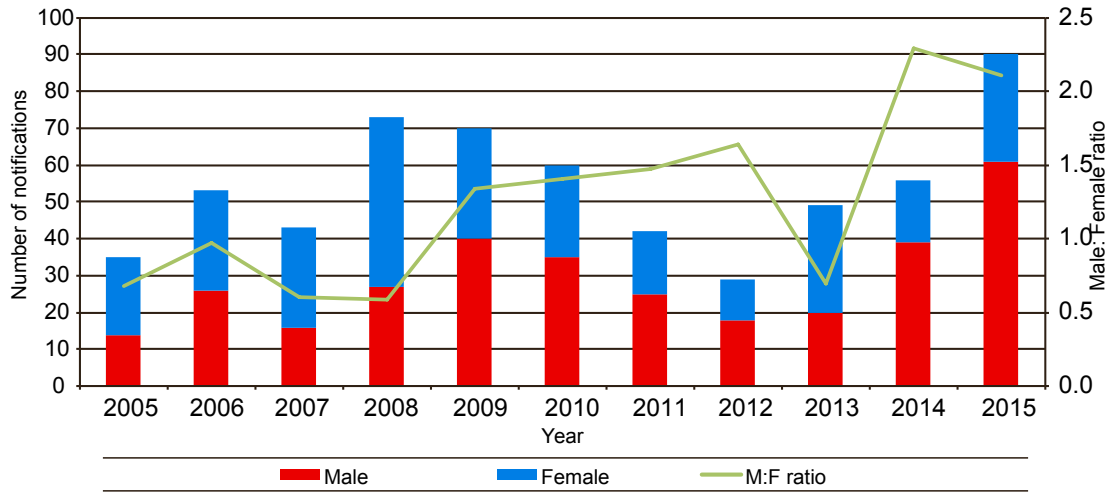

Figure 1: Annual number of notifications shigellosis by sex and year (Data source: CIDR)

Table 1: Number of notifications shigellosis by travel association, age group and sex, 2015 (Data source: CIDR)

2015	Travel associated		Indigenous		Travel history unk		Total notifications			
	F	M	F	M	F	M	F	M	Total	M: F ratio
0-4 yrs	2	2	2	1	1	2	5	5	**10**	1.0
5-14 yrs	2	3	1				3	3	**6**	1.0
15-24 yrs	2	3		3			2	6	**8**	3.0
25-34 yrs	5	4		8	1	7	6	19	**25**	3.2
35-44 yrs	3	6	1	4		2	4	12	**16**	3.0
45-54 yrs	5	2	1	3		4	6	9	**15**	1.5
55-64 yrs	2	3		1		1	2	5	**7**	2.5
65+ yrs		1	1				1	1	**2**	1.0
Age unk						1		1	**1**	
Total	**21**	**24**	**6**	**20**	**2**	**17**	**29**	**61**	**90**	**2.1**
M:F ratio	*1.1: 1.0*		*3.3: 1.0*		*8.5: 1.0*		*2.1: 1.0*			

Table 2: Shigellosis outbreaks 2015 (Data source: CIDR)

HSE-area	Outbreak type	Location	Transmission mode	Number ill	Serotype
HSE-E	General	Community	Person-to-person	28	*S. sonnei* & *S. flexneri*
HSE-W	General	Workplace	Person-to-person	2	*S. sonnei*
HSE-M	Family	Travel-related	Unknown	2	*S. boydii*

Information on travel history is very valuable when reviewing surveillance data for possible indigenous clusters. Data on country of infection was available for 79% of shigellosis notifications this year. Forty-five cases were reported as being associated with foreign travel in at least 23 countries during 2015. Twenty-six cases were reported as being acquired in Ireland, while no country of infection information was available for 19 cases.

S. sonnei was the most common species reported (n=45), followed by *S. flexneri* (n=27). Three *S. boydii* and two *S. dysenteriae* were also reported while species was not reported for the remaining 13 confirmed cases. When analysed by travel association, *S. flexneri* was equally common among indigenous cases (30.8%) as travel associated cases (31.1%). *S. sonnei* was more common among indigenous cases (57.7%) than travel associated cases (42.2%).

Three shigellosis outbreaks were notified in 2015, resulting in 32 cases of illness and five associated hospitalisations. Table 2 summarises the three outbreaks reported during 2015. A large outbreak of shigellosis comprising 28 episodes of illness among 27 individuals, was reported among men who have sex with men (MSM). Infection with multiple serotypes was recorded.

More detailed typing of *Shigella* isolates can provide useful information on the relatedness of strains which can be used by public health personnel to outrule/provide evidence for links between cases during investigations of case clusters. The National *Salmonella*, *Shigella* and *Listeria* Reference Laboratory (NSSLRL) provide laboratory services for speciation, serotyping, antimicrobial resistance profiling, and where appropriate, Pulsed Field Gel Electrophoresis (PFGE) of *Shigella* isolates. The species/serotype and antimicrobial resistance patterns of these cases are reported in Table 3.

During 2015, the NSSLRL reported an increase in specimen referral from regional laboratories. This is likely a result of the increased sensitivity of direct molecular detection methods which were recently introduced by regional laboratories for faecal pathogen screening. [1] An increase in ciprofloxacin resistance among *S. sonnei* isolates has been identified by NSSLRL since 2010; this appears to be particularly evident among isolates originating in South Asia.[1] Further details of *Shigella* strain characterisation performed at NSSLRL can be found in the NSSLRL Annual Report.[1]

Table 3: Species/serotypes and AMR profiles of Shigella isolates referred to NSSLRL in 2015

Serotype	Number by serotype	AMR profile	Number by serotype and AMR profile
Shigella boydii	4	none	1
Shigella boydii		T	2
Shigella boydii 2		STm	1
Shigella dysenteriae	2	ACSSuTTm	1
Shigella dysenteriae		ACSSuTTm-NaCpCtxCef	1
Shigella flexneri	27	ACSSuTTm-NaAzt	1
Shigella flexneri 1b		ACSSuTTm	2
Shigella flexneri 1b		ACSTTmNa	1
Shigella flexneri 1b		ASSuTTm	1
Shigella flexneri 2		SSuTTmNaCp	1
Shigella flexneri 2a		ACSSuTTm	2
Shigella flexneri 2a		ACSSuTTmAzt	2
Shigella flexneri 2a		ACSSuTTm-NaCp	1
Shigella flexneri 2a		ACST	5
Shigella flexneri 2a		ACSTTmNaCp	1
Shigella flexneri 2b		ACSTm	1
Shigella flexneri 3a		ACST	2
Shigella flexneri 3b		ACST	1
Shigella flexneri 4		ACSSuTTm	1
Shigella flexneri X variant		ASSuTTmAzt	3
Shigella flexneri X variant		none	1
Shigella flexneri X variant		T	1
Shigella sonnei	33	ASSuTmGmCtx	1
Shigella sonnei		ASSuTTm-NaAzt	1
Shigella sonnei		ASSuTTm-NaCpCtx	1
Shigella sonnei		ASSuTTm-NaGmCtx	1
Shigella sonnei		SSuTm	1
Shigella sonnei		SSuTTm	13
Shigella sonnei		SSuTTmNa	9
Shigella sonnei		SSuTTmNaCp	1
Shigella sonnei		SSuTTmNaC-pAzt	1
Shigella sonnei		STmNaCp	1
Shigella sonnei		TmNaCp	3
Total	**66**	**Total**	**66**

References

1. National Salmonella Reference Laboratory of Ireland, Annual Report for 2015. Available at: http://www.nuigalway.ie/research/salmonella_lab/reports.html