

3.8 Shigellosis

Summary

Number of confirmed cases: 44
 Number of probable cases: 5
 Crude incidence rate: 1.1/100,000

In the last twenty years, the number of cases of shigellosis in Ireland has been low in comparison to the number of cases notified in the early 1990s (Figure 1). Shigellosis, however, remains a common cause of gastrointestinal illness in developing countries, and many cases notified in Ireland are now identified as being travel-associated.

While person-to-person spread is an important transmission route between children, risks also remain from food, with at least four general outbreaks having been reported in Scandinavia in 2009 associated with imported fresh produce.¹⁻⁵ Transmission between men who had sex with men (MSM) has been reported.^{6,7}

Forty-nine cases of shigellosis were notified in Ireland in 2013 (CIR 1.1 per 100,000, 95% CI 0.8-1.4), 45 of which were laboratory confirmed. This compares to 29 notifications in 2012, and 42 cases in 2011 (Figure 1). Of 43 cases where hospitalisation status was recorded, 11 (26%) were reported as hospital in-patients.

From 2009 to 2012, there was an excess of male cases compared to females, contrary to the trend prior to that. This trend was reversed again in 2013, with more females (n=29) than males (n=20) for the first time since 2008 (Figure 2).

In 2013, cases ranged in age from 11 months to 86 years (median age=28 years). In the age groups 35-44 and 45-54 yrs, males predominated, whereas females were equally or more common in all other age groups (Figure 3).

Information on travel history is very valuable when reviewing surveillance data for possible indigenous

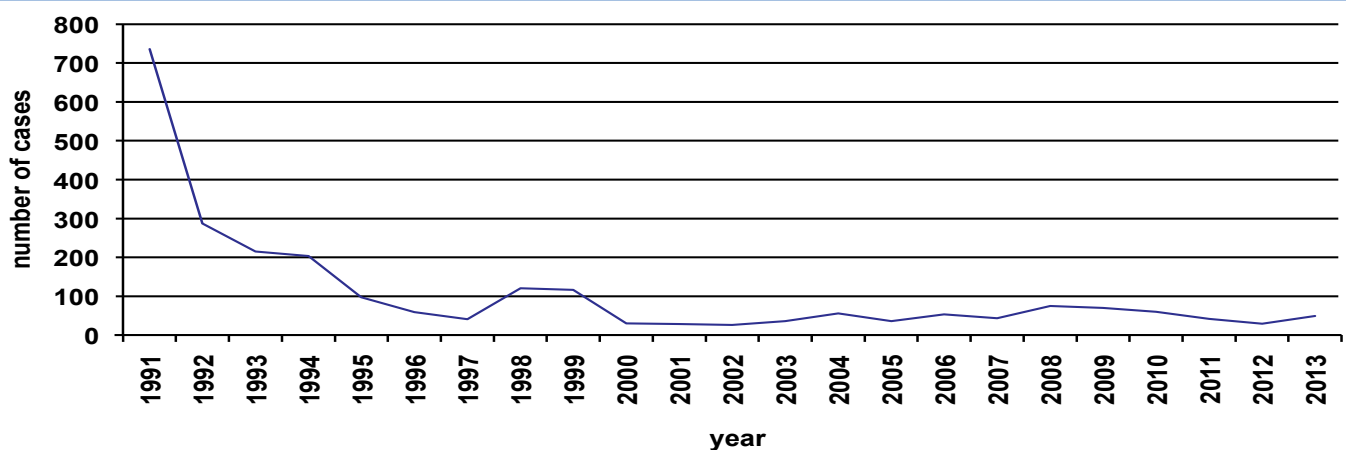


Figure 1: Annual number of notifications shigellosis, Ireland 1991-2013 (Data source: CIDR)

Table 1: Number of notifications shigellosis by species and country of infection, Ireland 2013

Organism	Africa	Asia	Other Europe	Ireland	Not specified	Total
<i>Shigella boydii</i>		5				5
<i>Shigella flexneri</i>	2	4	1	5	3	15
<i>Shigella sonnei</i>	3	6	1	11	3	24
Species not specified	1					1
Probable epi-linked case	1	1		2		4
Total	7	16	2	18	6	49

(Data source: CIDR)

clusters, and data on country of infection in the national dataset continues to improve, being available for 88% of shigellosis notifications this year. Historically, the country most frequently associated with travel-related shigellosis infections is India. Twenty-five cases were reported associated with foreign travel in 2013. The countries of infection reported were India (n=11), two each associated with Nigeria, Pakistan and Ethiopia, and one case each associated each with travel to Bangladesh, Germany, Rwanda, Sudan, Tanzania, Turkey, United Kingdom and the United Arab Emirates. Eighteen infections were reported as being acquired in Ireland, while no country of infection information was available for six cases.

Shigella sonnei was the most common species reported (n=24), followed by *S. flexneri* (n=15), *S. boydii* (n=5) with the species not reported for the remaining confirmed case. The species distribution of cases by country of infection is reported in Table 1. *S. boydii* cases were exclusively associated with travel to Asia, while *S. flexneri* and *S. sonnei* infections were associated with travel and non-travel associated cases.

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) in Galway University Hospital provide laboratory services for speciation, serotyping, antimicrobial resistance profiling, and where appropriate, Pulsed Field Gel Electrophoresis (PFGE) of *Shigella* isolates.

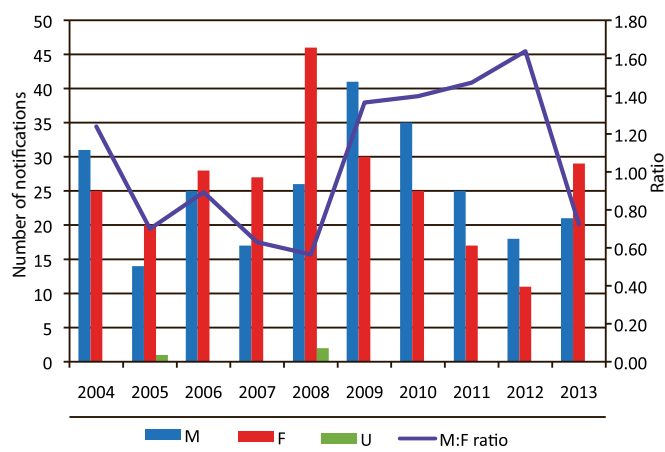


Figure 2: Sex distribution shigellosis notifications, Ireland 2004-2013
(Data source: CIDR)

Table 3. Notified shigellosis outbreaks, Ireland 2013

HSE-area	Outbreak type	Location	Transmission mode	Number ill	Serotype
M	Family	Travel-related	Person-to-person	3	<i>Shigella flexneri</i>
MW	Family	Extended family	Unknown	5	<i>Shigella flexneri</i>
MW	Family	Travel-related	FB and WB	2	<i>Shigella sonnei</i>
S	General	Comm. Hosp/Long-stay unit	Person-to-person	9	<i>Shigella sonnei</i>

(Data source: CIDR)

In 2013, 44 human *Shigella* isolates were referred to the NSRL, 98% of the isolates from notifications reported as confirmed. This is the highest proportion of isolate referrals to NSSLRL (Figure 4). In previous years, the proportion of isolates referred to NSSLRL ranged from 41% to 71%.

The species/serotype and antimicrobial resistance patterns of these cases are reported in Table 2.

An increase in ciprofloxacin resistance among *S sonnei* isolates has been identified by NSSLRL since 2010; this appears to have a significant association with exposure in India.⁸ Further details of *Shigella* strain characterisation performed at NSSLRL can be found in the NSSLRL Annual Report.⁹

There were four shigellosis outbreaks notified in 2013. One general outbreak of shigellosis was reported in a

Table 2: Species/serotypes and AMR profiles of *Shigella* isolates referred to NSSLRL in 2013 (Data courtesy of Martin Cormican, Niall de Lappe and Jean O Connor at NSSLRL)

Serotype	Number by serotype	AMR profile	Number by serotype and AMR profile
<i>Shigella boydii</i>	5	ASSuTTm	2
		Na	1
		SSuTm	1
		SSuTmNa	1
<i>Shigella flexneri</i> 1b	2	A	2
<i>Shigella flexneri</i> 2a	7	ACSSuTTm	6
		STTmNaCp	1
<i>Shigella flexneri</i> 2b	1	ACST	1
<i>Shigella flexneri</i> 3a	1	CSSuTTmNaCp	1
<i>Shigella flexneri</i> 4a	1	ASSuTTm	1
<i>Shigella flexneri</i> 6	2	SSuTTm	1
		SSuTTmNaCp	1
<i>Shigella flexneri</i> X variant	2	ASSuTTm	2
<i>Shigella sonnei</i>	23	ACSSuTTm	1
		ASSuTm	1
		ASSuTTmNaCpCtx	1
		ASuTm	1
		SSuTm	1
		SSuTTm	3
		SSuTTmNa	1
		SSuTTmNaCp	10
		STTmNaCp	1
		SuTm	2
Not reported	1		
Total	44	Total	44

(Data source: NSSLRL)

long-stay unit. There were nine people ill over a period of four weeks, four of whom were confirmed as being infected with *S sonnei*. The mode of transmission was reported as person-to-person. Two small family outbreaks were associated with foreign travel, while an indigenous extended family outbreak was reported with five persons ill.

Although foreign travel is a major risk factor for shigellosis among Irish residents, indigenous risks are likely to be through person-to-person spread (in some instances from persons who have contracted shigellosis abroad), and from food, as demonstrated by the Scandinavian outbreaks associated with imported foods in recent years.

References

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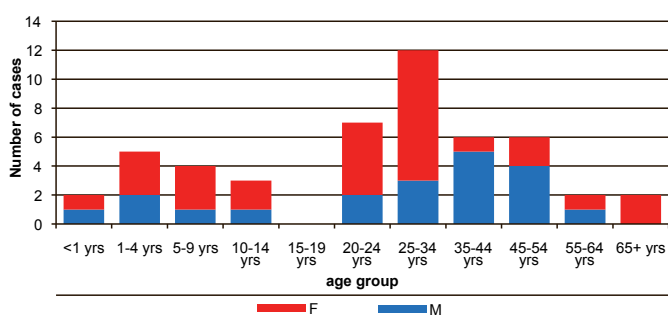


Figure 3. Age-sex distribution of shigellosis notifications, Ireland 2013
(Data source: CIDR)

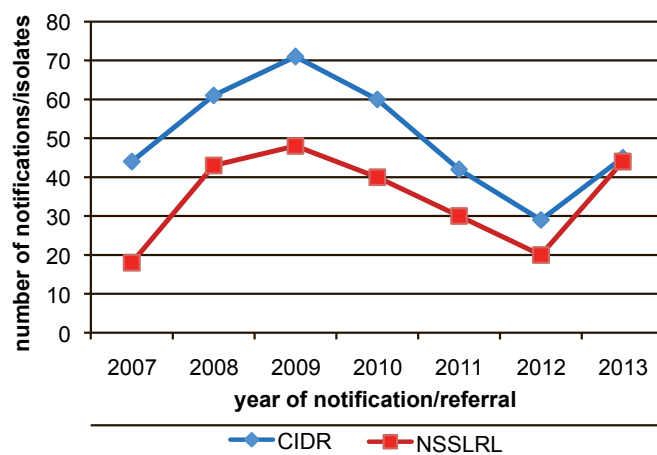


Figure 4. Annual number of confirmed shigellosis notifications compared to the number of isolates referred to NSSLRL, Ireland 2007-2013
(Data source: CIDR and NSSLRL)