

# 3.8 Shigellosis

## Summary

Number of cases 2008: 76  
 Number of cases 2007: 43  
 Crude incidence rate: 1.8/100,000

In the last decade, the number of cases of shigellosis in Ireland has been low in comparison to the number of cases notified in the early 1990s (Figure). 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.

Moreover, risks also remain from food, with at least four general outbreaks having been reported in Scandinavia in 2009 associated with imported fresh produce.<sup>1-5</sup> The foods implicated included sugar peas and baby corn eaten raw.

Seventy-six cases of shigellosis were notified in Ireland in 2008, 63 of which were confirmed cases and 13 were probable cases reported on the basis of being epidemiologically-linked to one outbreak. This compares to 43 cases in 2007 and 54 in 2006 (Figure).

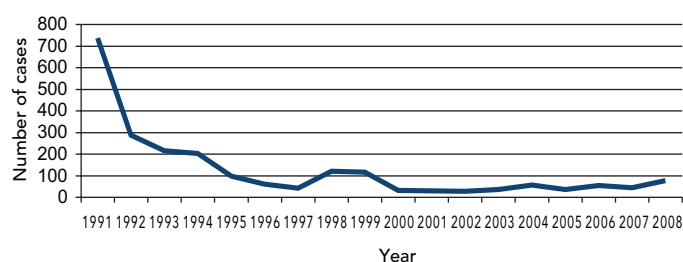


Figure: Annual number of notifications shigellosis, Ireland 1991-2008

Table 1: Number of notifications shigellosis by species and country of infection, Ireland 2008

	Ireland	Africa	Asia	Other	Not known/ not reported	Total
<i>S. boydii</i>	1	0	3	0	2	6
<i>S. flexneri</i>	3	5	5	1	8	22
<i>S. sonnei</i>	9	4	2	2	16	33
Species not specified/not known	1	0	0	1	0	2
Probable cases	12	0	0	0	1	13
Total	26	9	10	4	27	76

The increase in numbers was primarily due to the occurrence of two indigenous general outbreaks in 2008.

Cases ranges in age from one to 61 years (mean age=26 years, median age=27 years), with more females (n=47) than males (n=27) notified; for two cases sex was not reported.

Information on travel history is very valuable when reviewing surveillance data for possible indigenous clusters, and data on country of infection in the national dataset is improving being available this year for almost two-thirds (49/76) of notifications. In 2008, twenty-three cases (30%) were reported associated with foreign travel (Table 1). The countries of infection reported were India (n=5), Egypt (n=3), Pakistan (n=2), Mexico (n=2), and there was one case associated with travel to each of Afghanistan, China, Ghana, Jordan, Liberia, Madagascar, Morocco, Namibia, Nigeria, Spain and Venezuela. Twenty-six cases were reported as being acquired in Ireland.

Among confirmed cases, *Shigella sonnei* was the most common species reported (n=33). There were also 22 *S. flexneri*, six *S. boydii*, and two confirmed cases

for which the species was not reported. The species distribution of cases by country of infection is reported in Table 1.

More detailed typing of *Shigella* isolates can provide useful information on the relatedness of strains which can be used by public health personnel to outline/provide evidence for links between cases during investigations of case clusters. The National Salmonella Reference Laboratory (NSRL) in University College Hospital, Galway can provide laboratory services for speciation, serotyping, antimicrobial resistance profiling, and where appropriate, Pulsed Field Gel Electrophoresis (PFGE) of *Shigella* isolates.

In 2008, 43 human *Shigella* isolates were referred to the NSRL, almost 70% of all confirmed cases. The species/serotype distribution of these cases is reported in Table 2.

There were four shigellosis outbreaks notified in 2008, details of which are provided in Table 3. Importantly, this included two general outbreaks. During investigation of the community outbreak of shigellosis in the HSE-MW, molecular typing (PFGE) of isolates was used at NSRL to compare the relatedness of strains and confirmed the likelihood that most of the cases were epidemiologically-linked.<sup>6</sup>

*Shigella* has been designated by the European Centre for Disease Control as one of six priority gastroenteric pathogens at European level (along

with *Campylobacter*, *Salmonella*, VTEC, *Listeria* and *Yersinia*). The continuing potential for foodborne outbreaks means that surveillance for shigellosis remains important, both for the identification of indigenous outbreaks, and for the identification of cases/clusters that could be part of larger international outbreaks associated with internationally-distributed foodstuffs. The continued referral of *Shigella* isolates to NSRL by primary hospital laboratories has the potential to play a key role in this work, and is much appreciated.

#### References

1. *Shigella sonnei* infections in Norway associated with sugar peas, May – June 2009. B T Heier 1, K Nygard1, G Kapperud1, B A Lindstedt1, G S Johannessen2, H Blekkan3 <http://www.eurosurveillance.org/ViewArticle.aspx?ArticleId=19243>
2. Imported fresh sugar peas as suspected source of an outbreak of *Shigella sonnei* in Denmark, April – May 2009. L Müller 1, T Jensen2, R F Petersen3, K Mølbak1, S Ethelberg1,3 <http://www.eurosurveillance.org/ViewArticle.aspx?ArticleId=19241>
3. Lewis HC, Ethelberg S, Olsen KE, Nielsen EM, Lisby M, Madsen SB, et al. Outbreaks of *Shigella sonnei* infections in Denmark and Australia linked to consumption of imported raw baby corn. *Epidemiol Infect* 2009;137(3):326-34.
4. Lewis HC, Kirk M, Ethelberg S, Stafford R, Olsen KE, Nielsen EM, Lisby M, Madsen SB, Mølbak K. Outbreaks of shigellosis in Denmark and Australia associated with imported baby corn, August 2007 – final summary. *Euro Surveill*. 2007;12(40):pii=3279. Available from: <http://www.eurosurveillance.org/ViewArticle.aspx?ArticleId=3279>
5. M Löfdahl, S Ivarsson, S Andersson, J Långmark, L Plym-Forsnell 2009. An outbreak of *Shigella dysenteriae* in Sweden, May–June 2009, with sugar snaps as the suspected source. *Eurosurveillance* 14:28 <http://www.eurosurveillance.org/ViewArticle.aspx?ArticleId=19268>
6. Health Service Executive (HSE) West Dept. of Public Health. 2008. ID link issue 25. Feb 2008 <http://www.lenus.ie/hse/bitstream/10147/50833/1/IDLink2008Q1.pdf>

Table 2: Species/serotypes of isolates referred to NSRL in 2008 (Data courtesy of Prof. Martin Cormican and staff at NSRL)

Strain	Number of isolates
<i>Shigella boydii</i>	4
<i>Shigella boydii</i> 19	1
<i>Shigella flexneri</i> 1b	2
<i>Shigella flexneri</i> 2a	7
<i>Shigella flexneri</i> 2b	1
<i>Shigella flexneri</i> 3a	3
<i>Shigella flexneri</i> 3b	1
<i>Shigella flexneri</i> 4	2
<i>Shigella sonnei</i>	22
<b>Total</b>	<b>43</b>

Table 3: *Shigellosis* outbreaks, Ireland 2008

Month	HSE-area	Transmission Route	Location	Type	Number ill
Feb	MW	Person-person	Community	General	8
May	E	Not specified	Travel-related	Family	2
May	E	Person-person / Foodborne	Private house	Family	2
June	M	Person-person	Creche	General	24