3.8 Shigellosis

Summary

Number of cases, 2009: 71
Number of cases, 2008: 76
Crude incidence rate, 2009: 1.7/100,000

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.

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 in Canada.[6]

Seventy one cases of shigellosis were notified in Ireland in 2009, all of which were laboratory confirmed. This compares to 76 cases in 2008 and 43 in 2007 (Figure). Cases ranged in age from 1 to 60 years (mean age=29 years, median age=29 years), with more males (n=40) than females (n=31) notified. This differs to the last four years where there were more females than males reported each year.

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 over two-thirds (49/71) of notifications. In 2009, 41 cases (58%) were reported associated with foreign travel (Table 1). The countries of infection reported were Egypt (n=9), Nigeria (n=6), Morocco (n=4), three each

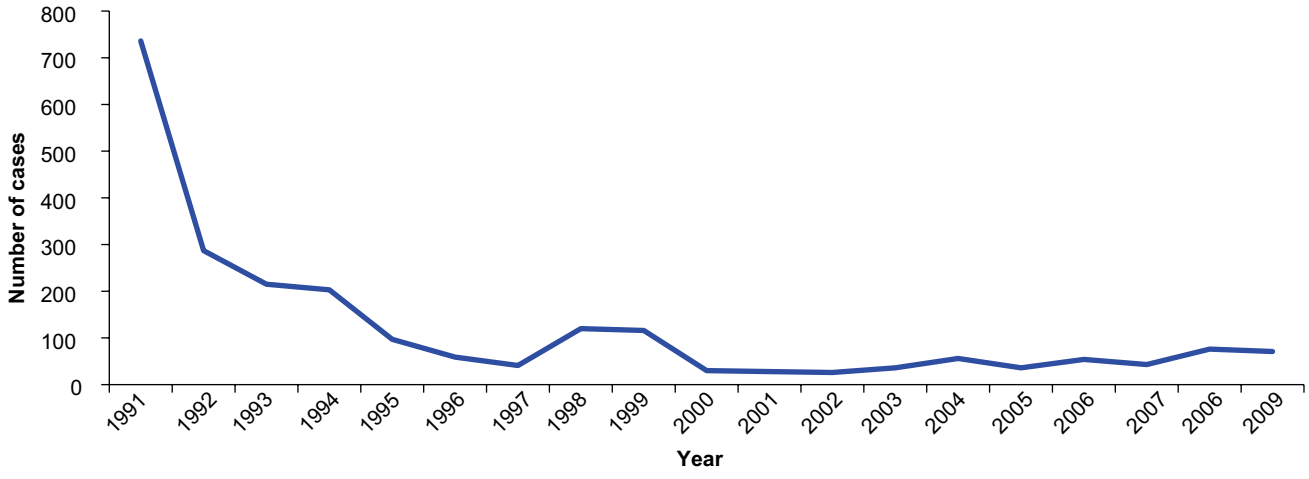

Figure. Annual number of notifications shigellosis, Ireland 1991-2009

Table 1. Number of notifications shigellosis by species and country of infection, Ireland 2009

	Ireland	Africa	Asia	Other	Not known/ not reported	Total
S. boydii	0	1	1	0	2	**4**
S. dysenteriae	0	3	0	0	1	**4**
S. flexneri	3	13	3	3	7	**29**
S. sonnei	5	11	2	4	11	**33**
Species not specified/not known	0	0	0	0	1	**1**
Total	8	28	6	7	22	**71**

in India, Pakistan and South Africa, two in Dominican Republic, and one each in Chad, Argentina, Portugal, Northern Europe, Tunisia, Algeria, Uganda, Nicaragua, Ghana, Czech Republic and Mozambique. Eight infections (11%) were reported as being acquired in Ireland, while no country of infection information was provided for 22 (31%) cases.

In 2009, *Shigella sonnei* was the most common species reported (n=33, 46%), closely followed by *S. flexneri* (n=29, 38%). There were also four *S. boydii* (6%), four *S dysenteriae* (6%) and one confirmed case (1%) 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 outrule/ 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 2009, 48 human *Shigella* isolates were referred to the NSRL, over two-thirds of all confirmed cases. The species/serotype distribution of these cases is reported in Table 2.

There were three shigellosis outbreaks notified in 2009, details of which are provided in Table 3. For the family outbreak in the HSE-M, the index case acquired their illness abroad.

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

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-Forshell 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. Gournis, E. 2010. SHIGELLOSIS, CHANGING EPIDEMIOLOGY - CANADA: (ONTARIO) REQUEST FOR INFORMATION. http://www.promedmail.org/pls/apex/f?p=2400:1001:687576564639::NO::F2400_P1001_BACK_PAGE,F2400_P1001_PUB_MAIL_ID:1010,81401

Table 2. Species/serotypes of isolates referred to NSRL in 2009
(Data courtesy of Prof. Martin Cormican and staff at NSRL)

Strain	Number of isolates
Shigella boydii	1
Shigella dysenteriae	2
Shigella dysenteriae E112707-96	1
Shigella dysenteriae type 2	1
Shigella flexneri 1b	5
Shigella flexneri 1c	3
Shigella flexneri 2a	11
Shigella flexneri 2b	2
Shigella flexneri 3a	1
Shigella flexneri 6	2
Shigella sonnei	19
Total	**48**

Table 3. Shigellosis outbreaks, Ireland 2009

Month	HSE-area	Transmission Route	Location	Type	Number ill
Mar	E	Person-to-person	Private house	Family	2
Jul	M	P-P/Foodborne	Private house	Family	6
Jul	E	P-P/Foodborne	Community	General	3