Seirbhís Sláinte Níos Fearr á Forbairt | Building a Better Health Service

hpsc

Annual Epidemiological Report

July 2019

Giardiasis in Ireland, 2018

Key Facts

- Reported incidence of giardiasis in Ireland in 2018 is 5.7 per 100,000, similar to the reported incidence at EU level
- Increase in recent yearsbelieved to be largely due to recent changes in laboratory practice
- The ratio to male to female cases is 1.4:1
- More than two thirds of cases were reported to be acquired in Ireland, a change to our historical understanding of giardiasis as a travel-acquired infection
- It is likely there is still under-ascertainment of giardiasis cases in several HSE-areas.
- Much remains to be done in Ireland and across Europe to better understand the epidemiology and determinants of this disease

Suggested citation: HSE Health Protection Surveillance Centre. Giardiasis in Ireland, 2018. Dublin: HSE HPSC; 2019

Table of Contents

Background

Giardiasis is caused by the protozoa *Giardia lamblia* which has been sub-classified into eight genetic assemblages (designated A–H), only two of which (A and B) infect humans. It is a form of gastroenteritis, characterised by diarrhoea, foul smelling, greasy stools, flatulence and nausea. Symptoms occur between 7-10 days (usually 1-3 days) after exposure to *Giardia*. Diarrhoea can be prolonged, leading to temporary malabsorption. Many cases are asymptomatic. It is the most commonly reported among the five food- and waterborne parasitic diseases under mandatory EU surveillance[1].

Transmission to humans is most commonly food- or water-borne (including recreational water exposure), although food-related outbreaks are less commonly reported than waterborne outbreaks. Person-to-person transmission, e.g. through sexual transmission or poor hygiene practices also occurs[2]. Historically in Ireland (along with many other European countries), it was believed to be largely associated with foreign travel, however, in recent years, it has become apparent that cases in Europe are mostly indigenous.

Methods

Disease notification

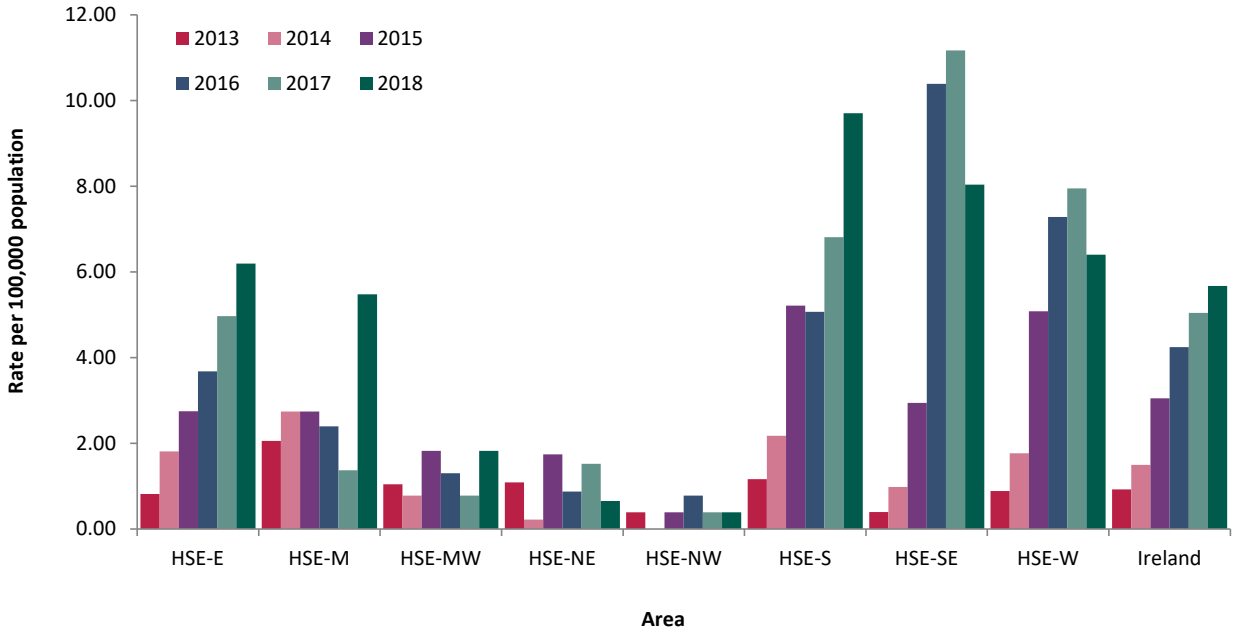
Giardiasis is a notifiable disease in Ireland under the Infectious Disease Regulations and cases should be notified to the Medical Officer of Health. Notifications are reported using the Computerised Infectious Disease Reporting system (CIDR) which is described here. Further information on the process of reporting notifiable infectious diseases is available here. The case definition in use in 2018 is here. For this report, data on cases notified to CIDR in 2018 were extracted from CIDR as of 20 June 2019.

Results

Basic epidemiology

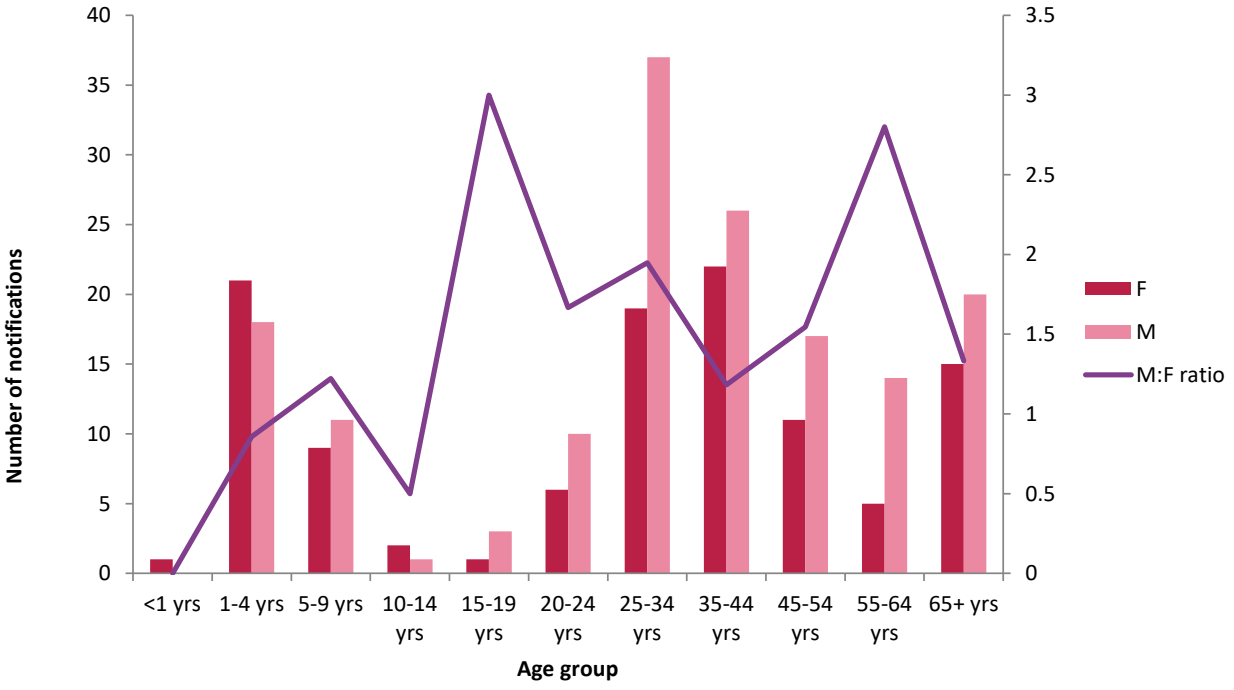
In 2018, there were 270 cases of giardiasis notified in Ireland, corresponding to a crude incidence rate (CIR) of 5.7 per 100,000 population. This is an increase of 13% in the CIR compared to 2017. In particular, five HSE-areas have experienced dramatically increasing trends in the number of notifications reported over the last five years (Figure 1), the HSE-M being the most recent area to experience this change in reported incidence.

Figure 1. Annual crude incidence rate giardiasis by HSE-area, Ireland 2013-2018



Cases ranged in age from eleven months-89 years with a median age of 34 years. The male to female ratio was 1.4:1.0, with the number of male cases exceeding that in females in all age groups over 15 years (Figure 2).

Figure 2. Number of giardiasis notifications by age group and sex and M:F ratio, Ireland 2018



The majority of cases were diagnosed in GP patients (69.0%), with 21% of cases admitted to hospital. A relatively long interval between onset and specimen submission (median 16 days) may reflect the relatively long duration of illness, albeit with perhaps less severity than some bacterial gastrointestinal pathogens.

Country of infection

Country of infection was reported for only 43% of cases in 2018, a decrease compared to 2017 (Table 1). Of the 114 cases where country of infection was reported, 37 (33%) were reported as being associated with foreign travel. Twenty different countries were reported, the most common of which were India (n=7), Spain (n=4), and Italy (n=4). Seventy-seven cases (68% of those with country of infection information) were reported as being acquired in Ireland, a further increase compared to the 63% reported in 2017. Country of infection was not reported for the remaining 156 cases.

Table 1. Number of *Giardia* notifications by place of infection, Ireland 2018

Place of infection	Number of notifications
Ireland	77
Asia	15
Other Europe	11
Africa	4
Americas	7
Unknown/not specified	156
Total	240

Outbreaks and clusters

Thirteen family and two general outbreaks of giardiasis were notified in 2018, with 34 persons ill (mean 2.4 per outbreak). Both general outbreaks were linked with healthcare facilities and comprised two cases each. Among the 13 family outbreaks, three were travel-related. Overall, three outbreaks were considered to be due to person to person transmission, two due to waterborne transmission, one with animal contact and nine with transmission route unknown.

Discussion

The number of notifications of giardiasis has increased six-fold in Ireland in the last six years. This increase appears to be largely due to recent changes in laboratory practice in respect of selection of stools for testing coincident with the introduction of newer, more sensitive, molecular detection methods. The rise in case numbers in HSE-areas occurred most suddenly in those areas served largely by a single regional laboratory service where practice changed (HSE-SE, HSE-S, HSE-M and HSE-W), and was more gradual in the HSE-E which is served by multiple laboratories, reflecting most likely a more gradual introduction of the new methodology across several laboratories. The reported crude incidence for Ireland of 5.7 per 100,000 is now similar to reported incidence at European level (5.8 per 100,000), but remains lower than the United Kingdom (8.1 per 100,000) [1].

As the most commonly reported food- and waterborne parasitic disease in the EU/EEA, ECDC has in its annual epidemiological report highlighted a need for more studies to understand the epidemiology and determinants of this disease in Europe and its long-term outcomes. They also cites giardiasis as a public health concern because of under-ascertainment at EU level, the occurrence of drug resistance, and its potential to cause outbreaks[1].

A recent review of giardiasis in the United Kingdom recommended appropriate testing for *Giardia* regardless of travel history, as improved testing will not only result in improved patient care but may also reduce disease transmission from untreated cases[2].

Public health implications

Given that in Ireland, three HSE-areas still notify very few cases, it is likely that there remains a degree of under-ascertainment. Much remains to be learned about the true epidemiology of giardiasis in Ireland, but it is clear that it causes a much larger burden of disease than previously thought, especially the burden acquired in Ireland.

Further information available on HPSC website

Further information about giardiasis is available at http://www.hpsc.ie/a-z/gastroenteric/giardiasis/

Previous annual reports on giardiasis in Ireland available at http://www.hpsc.ie/a-z/gastroenteric/giardiasis/publications/annualreports/

References

1. European Centre for Disease Prevention and Control. Giardiasis (lambliasis). In: ECDC. Annual epidemiological report for 2017. Stockholm: ECDC; 2019.
2. Horton B, Bridle H, Alexander C L, Katzer F (2019). *Giardia duodenalis* in the UK: current knowledge of risk factors and public health implications. Parasitology 146, 413–424. https://doi.org/10.1017/ S0031182018001683

Acknowledgements

Sincere thanks are extended to all those who participated in the collection of data used in this report. This includes the notifying physicians, public health doctors, surveillance scientists, microbiologists, nurses, laboratory staff and administrative staff.

Report prepared by:

Patricia Garvey