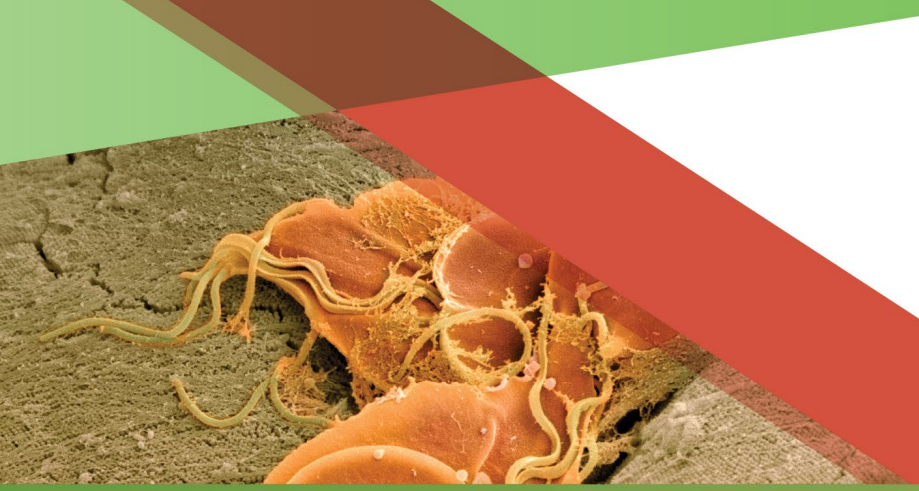


SURVEILLANCE REPORT

Giardiasis (lambliasis)

Annual Epidemiological Report for 2017

Key facts

- In 2017, 19 437 confirmed giardiasis cases were reported in the EU/EEA.
- The EU/EEA notification rate was 5.5 cases per 100 000 population. The highest notification rates were reported in Belgium, Estonia and Sweden.
- The highest notification rate per 100 000 was observed in the age group 0–4 years (17.6 for males and 14.9 for females).
- While the EU/EEA notification rate was stable during the period 2013–2017, the annual number of cases has increased steadily.

Methods

This report is based on data for 2017 retrieved from The European Surveillance System (TESSy) on 11 September 2018. TESSy is a system for the collection, analysis and dissemination of data on communicable diseases.

For a detailed description of methods used to produce this report, refer to the *Methods* chapter [1].

An overview of the national surveillance systems is available online [2].

A subset of the data used for this report is available through ECDC's online *Surveillance atlas of infectious diseases* [3].

In 2017, 24 EU/EEA Member States (22 EU Member States plus Iceland and Norway) reported giardiasis data, 22 of them with national coverage. Thirteen Member States used the latest case definition (EU 2012), eight the one from 2008, one from 2002, one Member State reported using another case definition and one did not specify it. The majority of Member States (22) undertook passive surveillance and in 14 countries, cases were reported by both laboratories and physicians and/or hospitals. Twenty-one Member States reported case-based data.

Notification rates and age-standardised rates were not calculated for Romania and Spain because their national surveillance systems do not cover the whole population.

Suggested citation: European Centre for Disease Prevention and Control. Giardiasis (lambliasis). In: ECDC. Annual epidemiological report for 2017. Stockholm: ECDC; 2019.

Stockholm, June 2019

Epidemiology

For 2017, 19 437 confirmed giardiasis cases were reported by 24 countries in the EU/EEA, with an overall rate of 5.5 per 100 000 population. The highest number of confirmed cases was reported by the United Kingdom, followed by Germany. These two countries accounted for 44% of all confirmed giardiasis cases in the EU/EEA. Belgium had the highest rate of 17.6 per 100 000 population, followed by Estonia and Sweden at 12.2 and 11.4 per 100 000 population respectively. (Table 1, Figure 1).

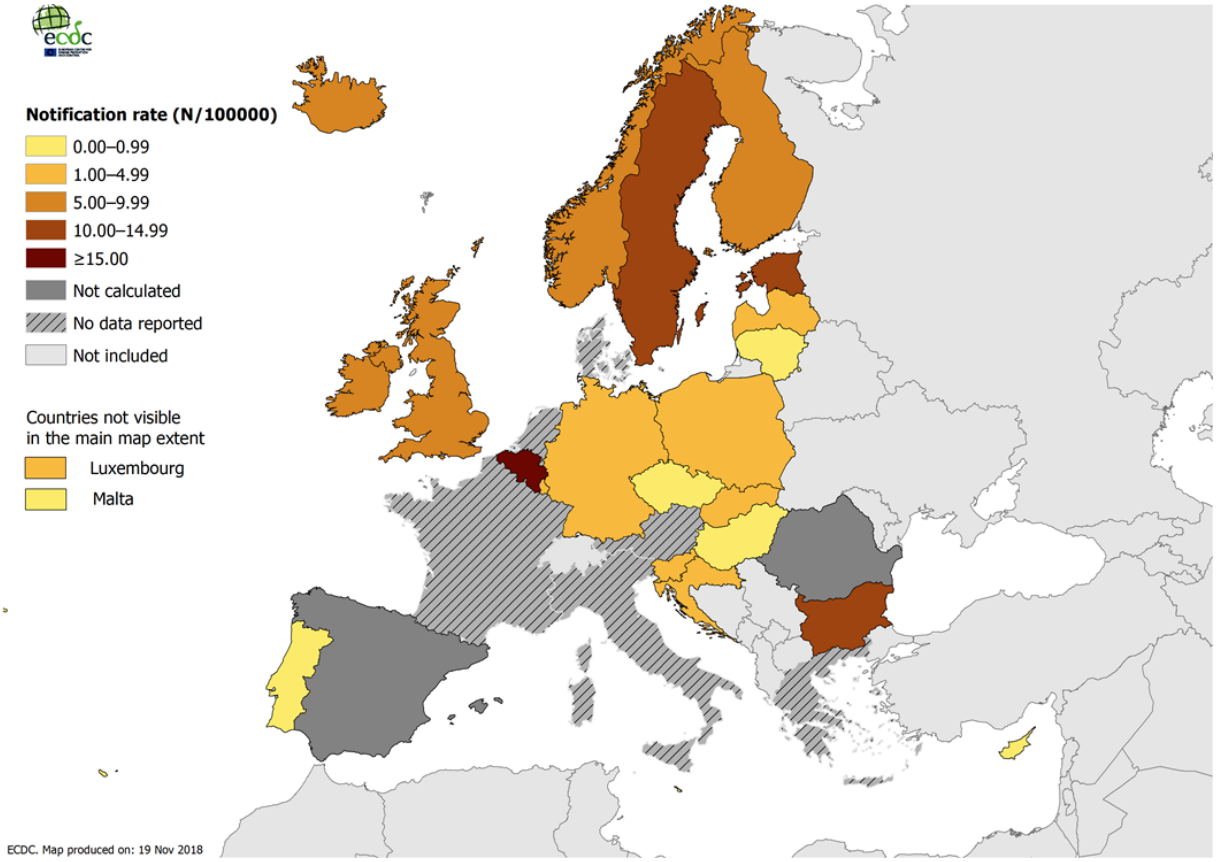
The majority (60.1%) of giardiasis cases with reported information were domestically acquired except in three Nordic countries (Iceland, Norway and Sweden), where 71%–83% of the cases were travel-associated.

Table 1. Distribution of confirmed giardiasis cases by country and year, EU/EEA, 2013–2017

Country	2013		2014		2015		2016		2017			
	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Confirmed cases	Rate	ASR	Reported cases
Austria	.	.	.	.	.	.	.	.	.	.	.	.
Belgium	1 220	-	1 144	-	1270	11.3	1 998	17.7	1 996	17.6	17.5	1 996
Bulgaria	1 873	25.7	1 731	23.9	1245	17.3	1 367	19.1	788	11.1	12.5	788
Croatia	0	0.0	80	1.9	93	2.2	50	1.2	51	1.2	1.3	54
Cyprus	3	0.3	3	0.3	6	0.7	1	0.1	5	0.6	0.6	5
Czech Republic	46	0.4	42	0.4	33	0.3	45	0.4	28	0.3	0.3	28
Denmark	.	.	.	.	.	.	.	.	.	.	.	.
Estonia	195	14.8	221	16.8	181	13.8	187	14.2	161	12.2	12.3	161
Finland	336	6.2	287	5.3	259	4.7	282	5.1	278	5.1	5.3	278
France	.	.	.	.	.	.	.	.	.	.	.	.
Germany	4 107	5.1	4 013	5.0	3 583	4.4	3 479	4.2	3 329	4.0	4.2	3 338
Greece	.	.	.	.	.	.	.	.	.	.	.	.
Hungary	59	0.6	59	0.6	130	1.3	108	1.1	73	0.7	0.8	74
Iceland	20	6.2	22	6.8	25	7.6	19	5.7	26	7.7	7.3	26
Ireland	44	1.0	71	1.5	145	3.1	202	4.3	239	5.0	5.0	240
Italy	.	.	.	.	.	.	.	.	.	.	.	.
Latvia	37	1.8	73	3.6	184	9.3	76	3.9	49	2.5	2.5	49
Liechtenstein	.	.	.	.	.	.	.	.	.	.	.	.
Lithuania	13	0.4	13	0.4	9	0.3	10	0.3	9	0.3	0.3	9
Luxembourg	1	0.2	3	0.5	2	0.4	0	0.0	6	1.0	1.0	6
Malta	0	0.0	2	0.5	0	0.0	4	0.9	4	0.9	0.9	4
Netherlands	.	.	.	.	.	.	.	.	.	.	.	.
Norway	227	4.5	264	5.2	247	4.8	343	6.6	485	9.2	9.1	485
Poland	1 830	4.8	1 871	4.9	1 687	4.4	1 445	3.8	1 229	3.2	3.4	1 229
Portugal	-	-	-	-	26	0.3	30	0.3	45	0.4	0.5	45
Romania	328	-	796	-	959	-	892	-	1 060	-	-	1 060
Slovakia	180	3.3	166	3.1	228	4.2	284	5.2	190	3.5	3.5	190
Slovenia	42	2.0	38	1.8	30	1.5	54	2.6	64	3.1	3.3	64
Spain	885	-	1 487	-	1 627	-	2 069	-	2 953	-	-	2 953
Sweden	1 253	13.1	1 260	13.1	1 473	15.1	1 491	15.1	1 144	11.4	11.3	1 144
United Kingdom	3 840	6.0	3 628	5.6	4 536	7.0	4 723	7.2	5 225	7.9	8.1	5 225
EU/EEA	**16 539**	**5.5**	**17 274**	**5.4**	**17 978**	**5.5**	**19 159**	**5.8**	**19 437**	**5.5**	**5.6**	**19 451**

Source: Country reports.
ASR: age-standardised rate
.: no data reported
-: no rate calculated

Figure 1. Distribution of confirmed giardiasis cases per 100 000 population by country, EU/EEA, 2017

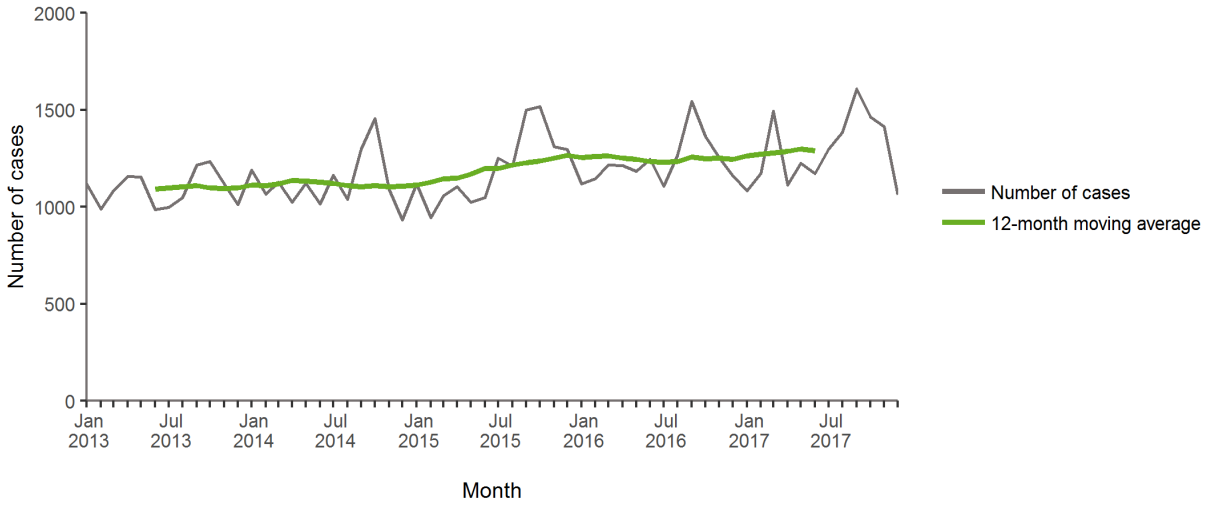


Source: Country reports from Belgium, Bulgaria, Croatia, Cyprus, the Czech Republic, Estonia, Finland, Germany, Hungary, Iceland, Ireland, Latvia, Lithuania, Luxembourg, Malta, Norway, Poland, Portugal, Slovakia, Slovenia Sweden, and the United Kingdom.

The number of confirmed giardiasis cases has steadily increased in the EU/EEA from 2013–2017 (Figure 2).

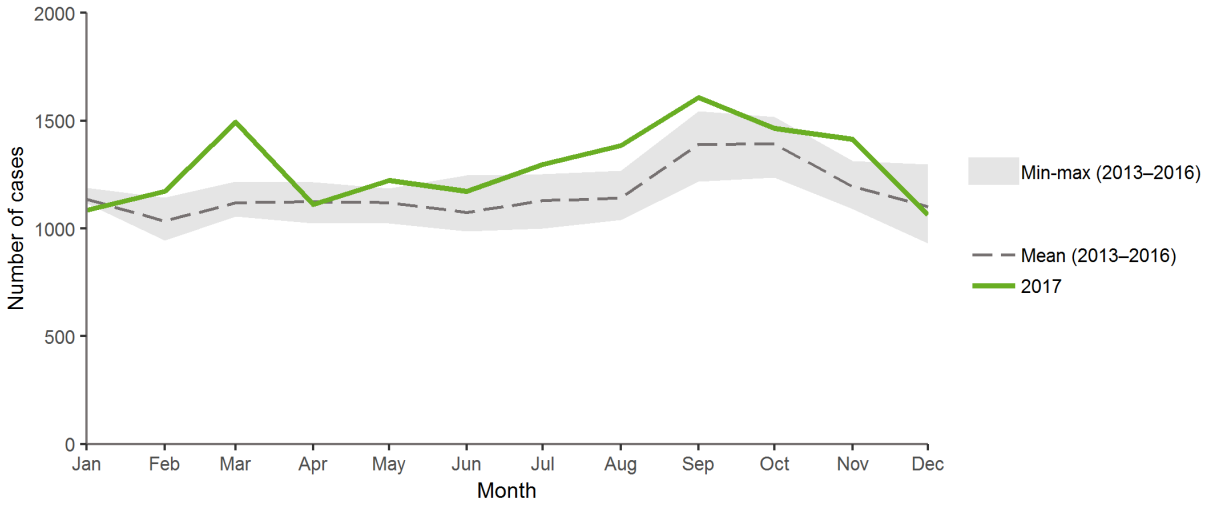
In 2017, cases of giardiasis did not show a clear seasonal pattern (Figure 3), although a higher number of cases were reported from August–October with a peak in September. There was a smaller peak in March and a higher number of cases reported over the year due to one more country (Belgium) starting to report monthly data in 2017 (Figure 3).

Figure 2. Distribution of confirmed giardiasis cases by month, EU/EEA, 2013–2017



Source: Country reports from Cyprus, Czech Republic, Estonia, Finland, Germany, Hungary, Iceland, Ireland, Latvia, Lithuania, Malta, Norway, Poland, Slovakia, Slovenia, Spain, Sweden and the United Kingdom.

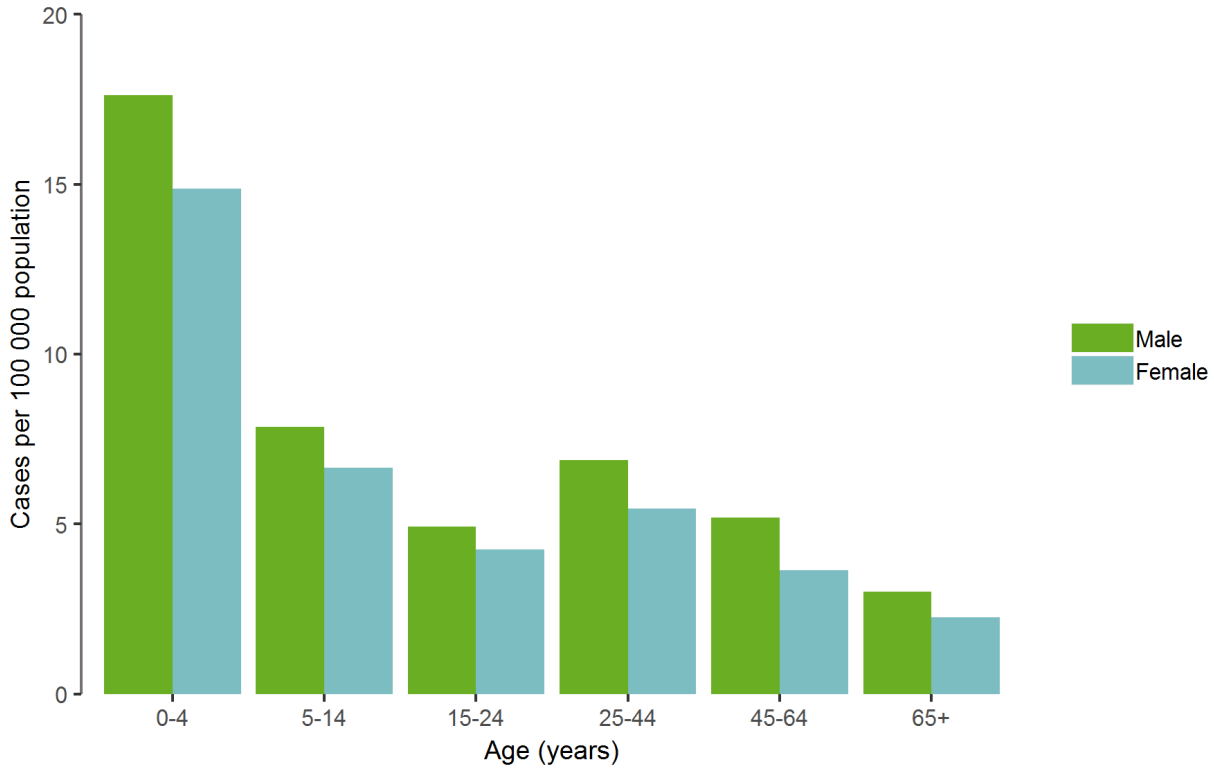
Figure 3. Distribution of confirmed giardiasis cases by month, EU/EEA, 2013–2016 and 2017



Source: Country reports from Cyprus, the Czech Republic, Estonia, Finland, Germany, Hungary, Iceland, Ireland, Latvia, Lithuania, Malta, Norway, Poland, Slovakia, Slovenia, Spain, Sweden and the United Kingdom.

Of the 18 329 confirmed cases with information on gender, 56% were males and 44% were females, corresponding to a male-to-female ratio of 1.3:1, with males overrepresented in every age group (Figure 4). The highest notification rate per 100 000 population was detected in the age group 0–4-years (17.6 for males and 14.9 for females). This age group accounted for 3 261 (18%) of the 18 327 cases with information on age. The notification rate decreased with age and was lowest in persons ≥ 65 years of age (3.0 per 100 000 population in males and 2.3 in females).

Figure 4. Distribution of confirmed giardiasis cases per 100 000 population by age and gender, EU/EEA, 2017



Outbreaks and other threats

No multi-country threats related to giardiasis were reported in 2017.

Discussion

Giardiasis is the most commonly reported among the five food- and waterborne parasitic diseases under mandatory EU surveillance. Surveillance of giardiasis covers the entire population in most EU/EEA countries. However, a review in 19 Eastern European countries showed discrepancies between the notification rates provided in the study and the officially reported rates in TESSy, suggesting under-reporting throughout Eastern Europe [4]. One-fourth of EU Member States do not have surveillance systems for giardiasis and do not report cases.

While the EU/EEA notification rate was stable from 2013–2017, the annual number of cases increased steadily. In 2017, Belgium continued to report the highest notification rate for giardiasis, following an increase in 2016 mainly due to the additional involvement of a large laboratory in 2016 (personal communication by email with Sofieke Klamer, Sciensano, 9 July 2017).

Giardiasis is caused by the protozoan *Giardia lamblia* (syn. *G. duodenalis*, *G. intestinalis*). *G. lamblia* organisms have been sub-classified using molecular typing into eight genetic assemblages (designated A–H), but only two of them (A and B) have been found to infect humans [5]. Recent studies found assemblage-specific risk factors and routes of transmission [6]. *G. lamblia* also infects other mammalian hosts and thus has zoonotic potential. Studies in Slovakia detected the first human cases linked to dog-specific assemblage C and cat-specific assemblage F in Europe [7].

Human infection occurs most frequently via ingestion of contaminated food or water (including recreational water exposure) [5,6]. Person-to-person transmission, e.g. through sexual transmission [8] or poor hygiene practices [6], may also occur. In many countries, there may be a misconception that infections are largely associated with foreign travel. In most EU Member States, however, cases with known probable country of infection were mainly domestically acquired. Recent data in the UK highlighted that over 50% of cases within Scotland may be locally acquired [9]. However, in three Nordic countries (Iceland, Norway and Sweden), cases were almost entirely associated with travel outside the EU. Sweden, which had the third-highest notification rate in the EU/EEA, reported over 80% of the cases as infected abroad, mainly in Asia and Africa [10].

Public health implications

Giardiasis remains the most commonly reported food- and waterborne parasitic disease in the EU/EEA. More studies are needed to understand the epidemiology and determinants of this disease and its long-term outcomes. Parasites have complex lifecycles, often with long incubation periods and asymptomatic or subclinical manifestations, making diagnosis based on clinical symptoms alone challenging. All human stool samples submitted for diagnostic testing, irrespective of travel history, should be screened for *Giardia* cysts to permit the accurate reporting of locally acquired cases. Laboratories should have adequate methods to confirm suspected cases. While characterisation in parasitology is not as well developed as in bacteriology or virology, several studies have documented the added value of molecular techniques. Advances in the molecular characterisation of giardiasis diagnostics would enable more granular subtyping of isolates with large genetic differences, particularly in outbreak situations. Considering the likely degree of under-reporting and under-ascertainment, giardiasis is a public health concern because of the occurrence of drug resistance and its potential to cause outbreaks and spread due to climate change.

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