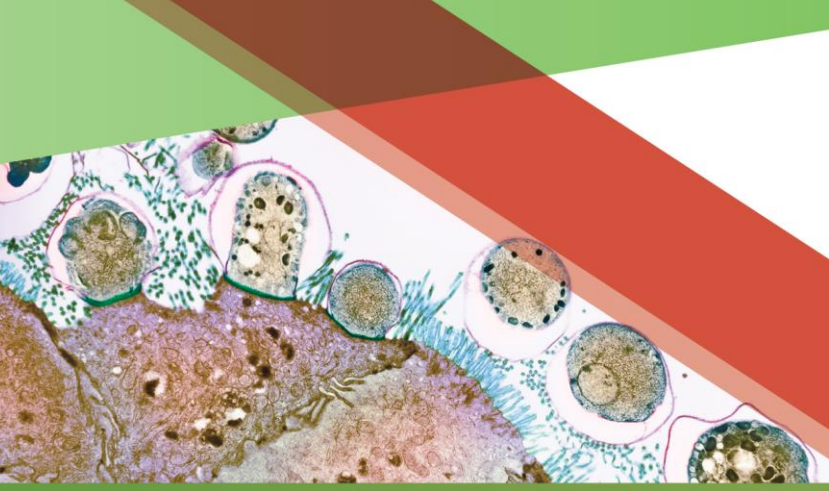


SURVEILLANCE REPORT

Cryptosporidiosis

Annual Epidemiological Report for 2017

Key facts

- For 2017, 21 EU/EEA countries reported 11 449 cryptosporidiosis cases, of which 11 418 were confirmed.
- The notification rate was 3.2 confirmed cases per 100 000 population.
- Germany, the Netherlands and the United Kingdom (UK) accounted for 71% of all confirmed cases, with the United Kingdom alone accounting for 44%.
- Most of the cases were reported in September 2017, following the seasonal pattern of previous years.
- Children aged 0–4 years had the highest notification rate of 12.5 cases per 100 000 population.

Methods

This report is based on data for 2017 retrieved from The European Surveillance System (TESSy) on 11 December 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, please 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].

For 2017, cryptosporidiosis data were reported by 25 EU/EEA countries, of which four did not report any cases.

Notification of cryptosporidiosis was mandatory in 20 EU Member States, Iceland and Norway. In three Member States, notification was either voluntary (Belgium and the Netherlands) or organised differently (the UK). No surveillance system exists in Austria, Denmark, France, Greece or Italy. Surveillance systems for cryptosporidiosis have full national coverage, except in the Netherlands and Belgium. All reporting countries report case-based data except Belgium, Bulgaria and the Netherlands, which report aggregate data. Both reporting formats were included to calculate numbers of cases, notification rates, disease trends and age and gender distributions [2].

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

Stockholm, October 2019

Epidemiology

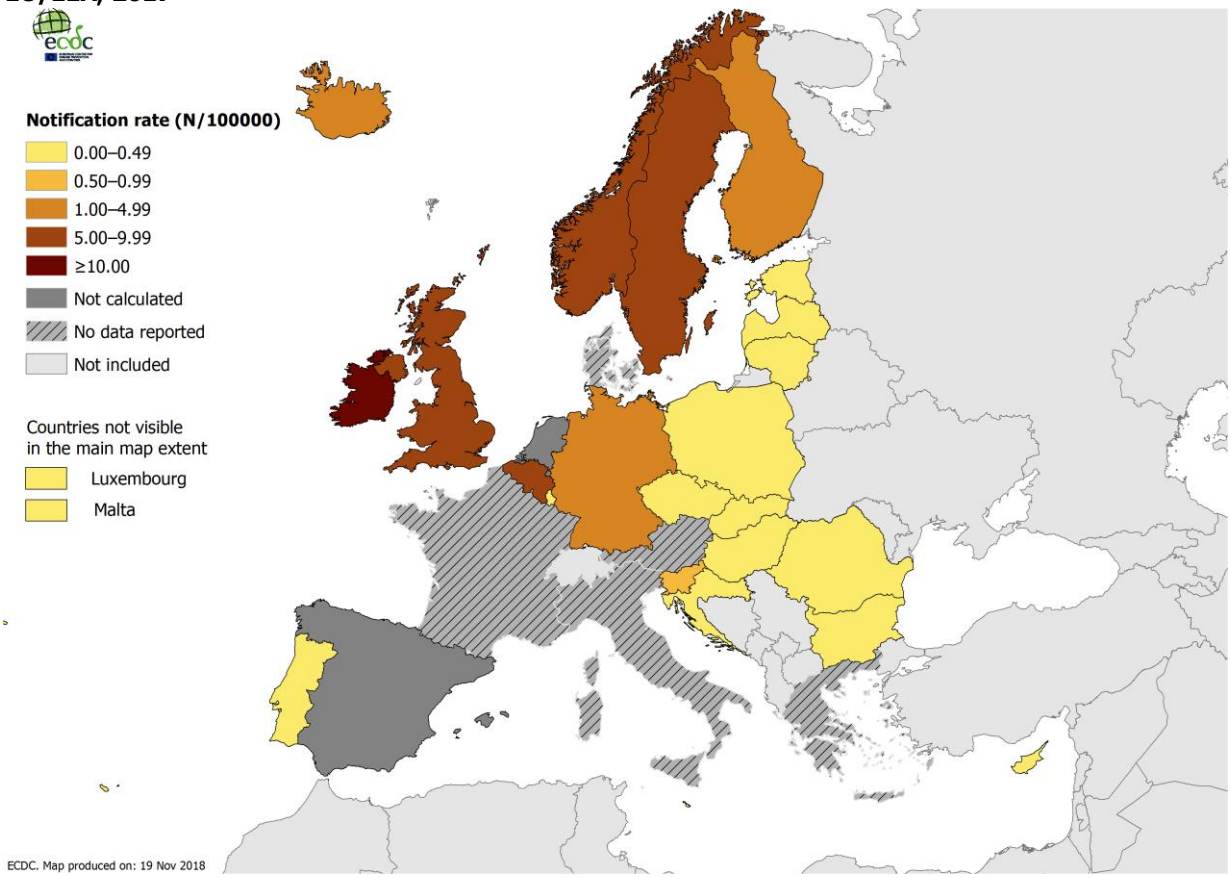
Of the 25 EU/EEA countries reporting for 2017, 21 countries reported 11 449 cryptosporidiosis cases, of which 11 418 (99.7%) were confirmed (Table 1). The number of confirmed cryptosporidiosis cases reported for 2017 was lower than the number reported for 2016 (n = 13 664) and translated to a notification rate of 3.2 per 100 000 population. Germany, the Netherlands and the UK accounted for 71% of all confirmed cases, with the UK alone accounting for 44%. Country-specific notification rates ranged from <1 per 100 000 in 15 Member States to 12 in Ireland and tended to be lower in eastern Europe than western and northern Europe (Figure 1). Contrary to the overall decrease in 2017, the rates in reporting Nordic countries increased, in Finland more than 3-fold and in Norway by almost 50%, compared to 2016.

Table 1. Distribution of confirmed cryptosporidiosis cases and rates per 100 000 population by country, EU/EEA, 2013–2017

Country	2013		2014		2015		2016		2017			
	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Confirmed cases	Rate	ASR	Reported cases
Belgium	376	-	229	-	991	8.8	1247	11.0	716	6.3	6.3	716
Bulgaria	0	0.0	3	0.0	0	0.0	4	0.1	6	0.1	0.1	6
Croatia	0	0.0	0	0.0	0	0.0	4	0.1	17	0.4	0.4	17
Cyprus	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0.0	0
Czech Republic	2	0.0	1	0.0	2	0.0	2	0.0	5	0.0	0.1	5
Estonia	0	0.0	2	0.2	4	0.3	1	0.1	0	0.0	0.0	0
Finland	24	0.4	31	0.6	31	0.6	71	1.3	250	4.5	4.8	250
Germany	1538	1.9	1719	2.1	1696	2.1	1839	2.2	1693	2.1	2.3	1707
Hungary	6	0.1	8	0.1	41	0.4	16	0.2	7	0.1	0.1	7
Iceland	6	1.9	2	0.6	12	3.6	8	2.4	11	3.3	3.0	11
Ireland	512	11.1	388	8.4	433	9.3	558	11.8	572	12.0	10.1	589
Latvia	2	0.1	3	0.1	3	0.2	3	0.2	4	0.2	0.2	4
Lithuania	2	0.1	1	0.0	4	0.1	0	0.0	1	0.0	0.0	1
Luxembourg	0	0.0	1	0.2	0	0.0	0	0.0	0	0.0	0.0	0
Malta	4	0.9	0	0.0	1	0.2	1	0.2	0	0.0	0.0	0
Netherlands*	975	-	984	-	1767	-	2090	-	1332	-	-	1332
Norway	31	0.6	70	1.4	86	1.7	255	4.9	379	7.2	7.3	379
Poland	1	0.0	5	0.0	3	0.0	6	0.0	7	0.0	0.0	7
Portugal	-	-	-	-	6	0.1	5	0.0	6	0.1	0.1	6
Romania	0	0.0	1	0.0	0	0.0	0	0.0	5	0.0	0.0	5
Slovakia	12	0.2	1	0.0	2	0.0	1	0.0	2	0.0	0.0	2
Slovenia	11	0.5	8	0.4	15	0.7	13	0.6	20	1.0	1.1	20
Spain	107	-	326	-	646	-	238	-	554	-	-	554
Sweden	224	2.3	404	4.2	527	5.4	594	6.0	779	7.8	8.2	779
United Kingdom	4035	6.3	4102	6.4	5901	9.1	6708	10.3	5052	7.7	7.6	5052
EU/EEA	**7868**	**2.3**	**8289**	**2.4**	**12171**	**3.3**	**13664**	**3.8**	**11418**	**3.2**	**3.2**	**11449**

Source: country reports
ASR: age-standardised rate-: no rate calculated
**: no national coverage.*

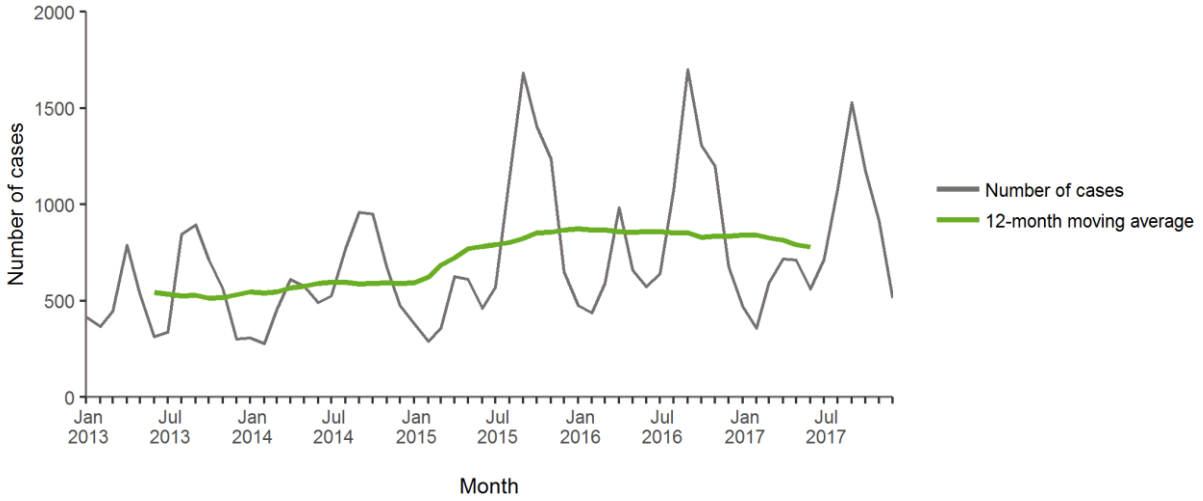
Figure 1. Distribution of confirmed cryptosporidiosis cases per 100 000 population by country, EU/EEA, 2017



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

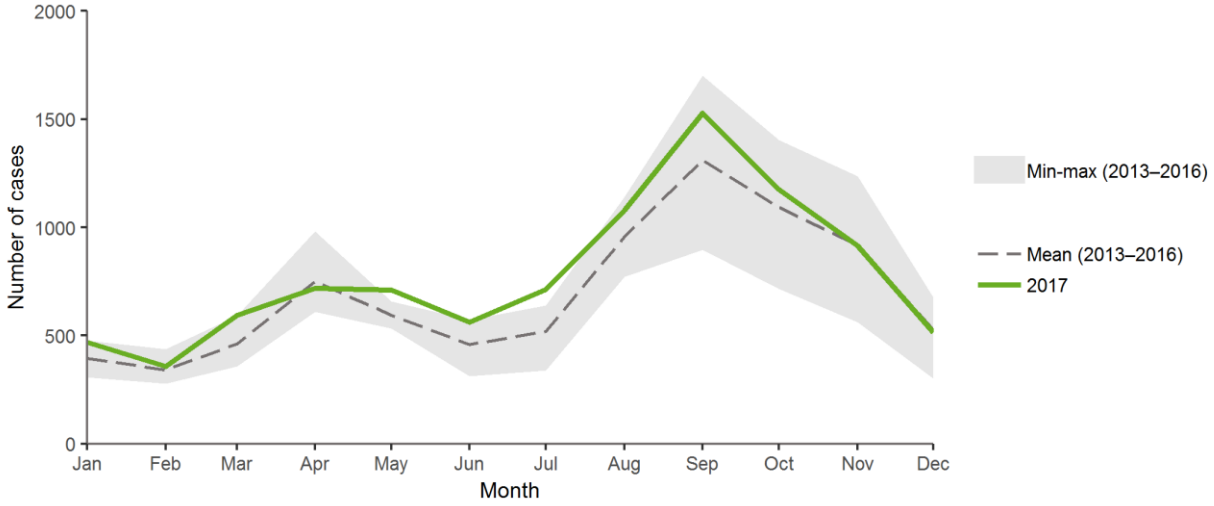
In 2017, cryptosporidiosis case reports followed the same seasonal pattern as in previous years (Figures 2 and 3). The distribution of cases was bimodal, with an increase in April and a peak in September. A large proportion of these peaks are attributable to cases from the UK (64% in April and 55% in September), where this seasonal pattern is predominant.

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



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

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

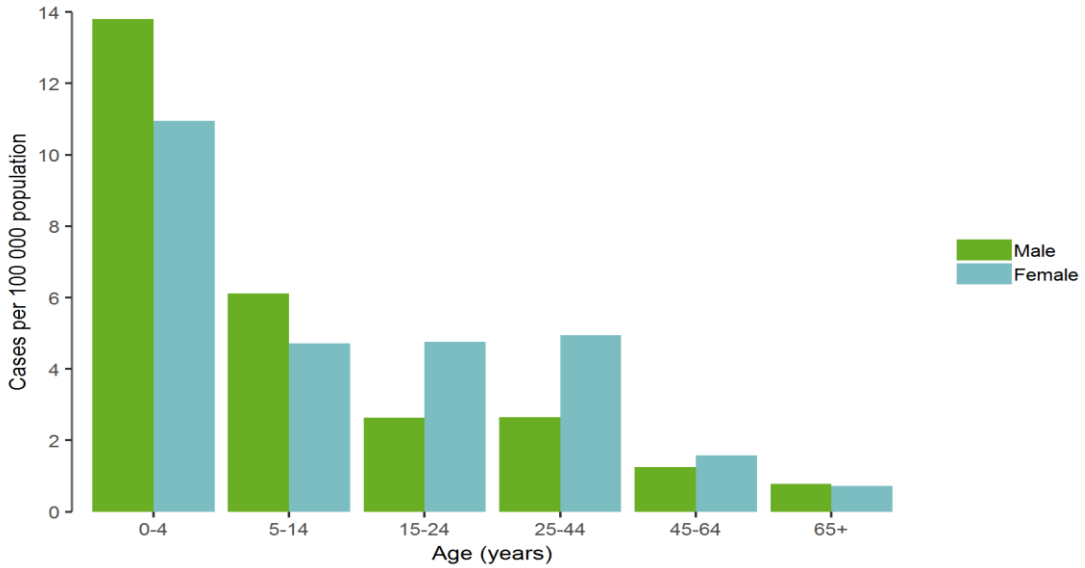


Source: Country reports from Cyprus, the Czech Republic, Estonia, Finland, Germany, Hungary, Iceland, Ireland, Latvia, Lithuania, Malta, Norway, Poland, Romania, Slovakia, Slovenia, Spain, Sweden and the United Kingdom.

Age and gender data were available for 88% of confirmed cryptosporidiosis cases. The highest notification rate was observed in the age group 0–4 years, with 13.8 confirmed cases per 100 000 males and 11 per 100 000 females (Figure 4). The highest notification rate in that age group was reported by Ireland (75.3 cases per 100 000 population), followed by Belgium (34.5) and the UK (28.3). Thirteen of the 22 countries for which rates could be calculated reported fewer than 1 case per 100 000 population in this age group.

The overall male-to-female ratio was 0.9:1 and varied by age group. There were more boys among children 0–4 years of age (male-to-female ratio 1.3:1) and more women of reproductive age with a male-to-female ratio of 0.5:1 in the age groups 15–24 and 25–44 years.

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



Outbreaks and other threats

In 2017, one country posted a *Cryptosporidium*-related notification through the Epidemic Intelligence Information System (EPIS): Ireland reported a cluster of *Cryptosporidium hominis* infection with 11 cases related to travel in Italy.

Discussion

Cryptosporidium remains a concern for human health. It is one of the most widely spread protozoan parasites infecting domestic and wild animals and is considered the second most common cause of severe gastroenteritis in children after rotavirus, also affecting immunocompromised patients [4,5]. *Cryptosporidium* oocysts are often detected in surface waters and it is expected that climate changes, causing extreme weather conditions, may increase the number of outbreaks in the future, particularly increasing the risk for children in urban areas [6,7].

Clusters and outbreaks of *Cryptosporidium* are reported every year by EU/EEU Member States, including local and travel-related cases. The cases typically acquired infection through drinking water, swimming in pools or open waters, through food, or contact with animals [8-11]. An increased risk of infection with *Cryptosporidium*, along with other gastrointestinal pathogens, has been reported for the participants in mass sporting events involving swimming in open waters [10].

After steadily increasing from 2013 to 2016, the EU/EEA notification rate for cryptosporidiosis decreased for the first time in 2017, largely attributable to a sizeable decrease in the United Kingdom. There is likely considerable underreporting by EU/EEA Member States, as almost half of the reporting countries (13 countries) reported less than 50 cases in 2017, similarly to 2016 [12]. Laboratory testing for cryptosporidiosis varies between countries and reporting of species information on cryptosporidiosis has been incomplete, which further limits the knowledge of the epidemiology of this disease in the EU/EEA [12].

Public health implications

Despite a relatively low EU/EEA notification rate, cryptosporidiosis is an important enteric disease to be monitored and controlled. It is also important to better understand the epidemiology of cryptosporidiosis in Europe in terms of species and subtype distribution and trends. This requires increased laboratory testing for parasites, pathogen isolation, speciation and subtyping and more complete reporting.

Awareness should be raised for hand hygiene, particularly in families with small children and especially families visiting petting-zoos or farms. Participants in mass sporting events involving swimming in open waters should also be aware of the increased risk of gastrointestinal infections, including cryptosporidiosis.

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