

SURVEILLANCE REPORT

Annual Epidemiological Report for 2016

Congenital toxoplasmosis

Key facts

- In 2016, 242 confirmed cases of congenital toxoplasmosis were reported in the EU/EEA, with France accounting for 81% of all confirmed cases due to the active screening of pregnant women.
- The notification rate was 6.7 cases per 100 000 live births.
- No seasonal pattern was observed for the disease.

Methods

This report is based on data for 2016 retrieved from The European Surveillance System (TESSy) on 22 October 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].

This surveillance report is based on congenital toxoplasmosis surveillance data collected by the European Food and Waterborne and Zoonoses (FWD) Network for 2016. Five countries (Austria, Belgium, France, Slovakia and Slovenia) have active surveillance of congenital cases with compulsory screening of pregnant women (Table 2). However, Austria and Belgium do not report their data to ECDC since the disease is not notifiable in Austria and there are no clear recommendations on the follow-up of seroconversion cases during pregnancy in Belgium. Four countries have voluntary screening, while another eight have no screening policies and/or surveillance of congenital toxoplasmosis. France regularly reports the highest number of cases, most likely due to its sensitive surveillance system that includes screening of pregnant women, follow-up of those who are negative to detect infection during pregnancy and laboratory confirmation of any congenital toxoplasmosis cases detected during the process, including asymptomatic cases.

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Epidemiology

In 2016, 21 countries reported 242 congenital toxoplasmosis cases, of which all were classified as confirmed (Table 1). France accounted for 80.6% of all cases. Thirteen countries reported no cases. The number of notifications per 100 000 newborn children was 6.7 in the EU/EEA, with the highest rates in France (24.9), followed by Poland (5.2), Slovenia (4.9) and Slovakia (3.5 per 100 000 newborn children) (Table 1, Figure 1).

In 2016, gender was reported for 98% of the congenital toxoplasmosis cases, with a male-to-female ratio of 1.1:1. Of 203 cases with known outcome, five were reported to have died, giving a case fatality of 2.5%.

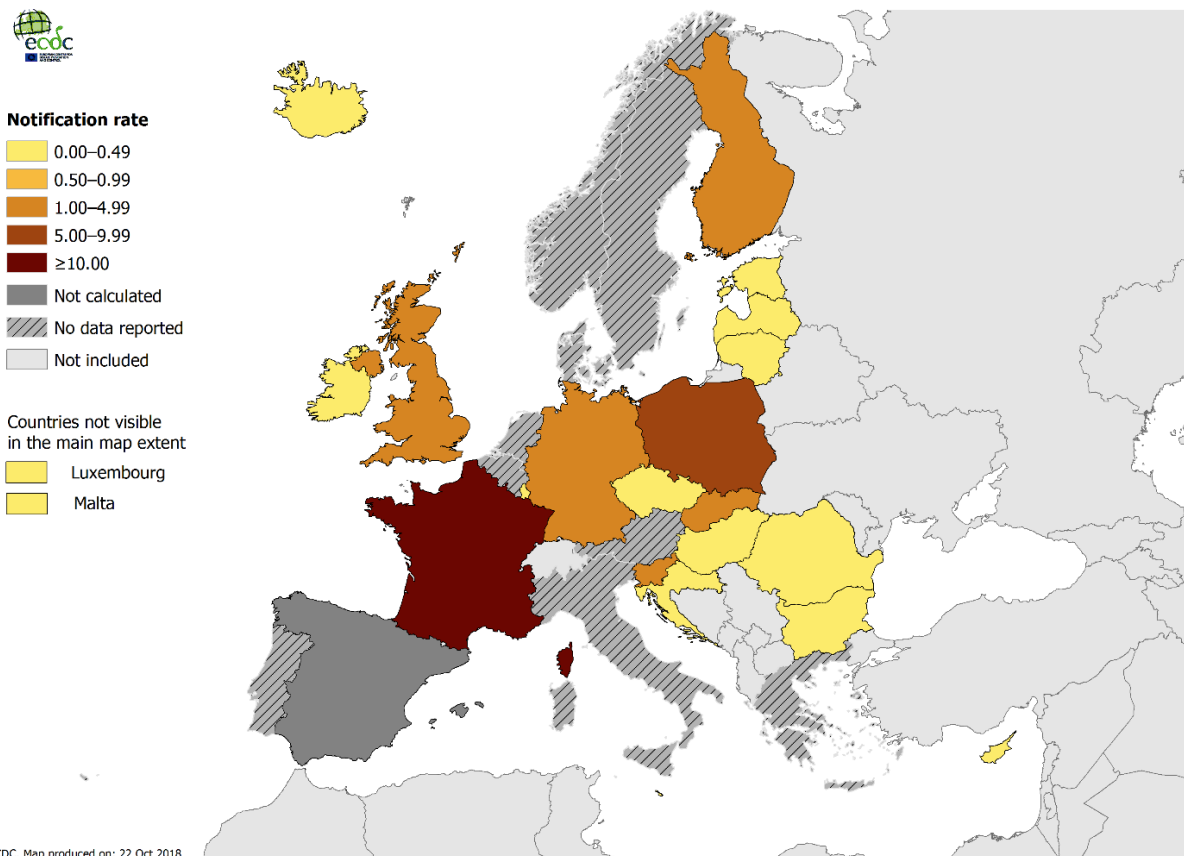
Table 1. Distribution of confirmed toxoplasmosis cases, EU/EEA, 2012–2016

Country	2012		2013		2014		2015		2016		
	Confirmed cases	Rate	Confirmed cases	Rate	Confirmed cases	Rate	Confirmed cases	Rate	Confirmed cases	Rate	Reported cases
Austria	.	.	.	.	.	.	.	.	.	.	.
Belgium	.	.	.	.	.	.	.	.	.	.	.
Bulgaria	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0
Croatia	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0
Cyprus	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0
Czech Republic	1	0.92	0	0.00	1	0.91	1	0.90	0	0.00	0
Denmark	.	.	.	.	.	.	.	.	.	.	.
Estonia	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0
Finland	0	0.00	0	0.00	0	0.00	0	0.00	1	1.89	1
France	104	12.65	179	22.04	216	26.36	246	30.76	195	24.86	195
Germany	20	2.97	10	1.47	6	0.84	15	2.03	10	1.26	10
Greece	.	.	.	.	.	.	.	.	.	.	.
Hungary	0	0.00	0	0.00	3	3.22	1	1.09	0	0.00	0
Iceland	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0
Ireland	1	1.40	1	1.45	0	0.00	1	1.53	0	0.00	0
Italy	.	.	.	.	.	.	.	.	.	.	.
Latvia	1	5.03	0	0.00	0	0.00	0	0.00	0	0.00	0
Liechtenstein	.	.	.	.	.	.	.	.	.	.	.
Lithuania	1	3.28	1	3.35	0	0.00	1	3.18	0	0.00	0
Luxembourg	1	16.59	0	0.00	0	0.00	0	0.00	0	0.00	0
Malta	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0
Netherlands	.	.	.	.	.	.	.	.	.	.	.
Norway	.	.	.	.	.	.	.	.	.	.	.
Poland	10	2.59	18	4.87	20	5.33	15	4.06	20	5.23	20
Portugal	.	.	.	.	.	.	.	.	.	.	.
Romania	0	0.00	0	0.00	1	0.50	0	0.00	0	0.00	0
Slovakia	0	0.00	2	3.65	0	0.00	0	0.00	2	3.47	2
Slovenia	0	0.00	0	0.00	0	0.00	1	4.84	1	4.92	1
Spain	0	0.00	0	0.00	0	0.00	0	0.00	5	0.00	5
Sweden	.	.	.	.	.	.	.	.	.	.	.
United Kingdom	5	0.62	2	0.26	11	1.42	7	0.90	8	1.03	8
EU/EEA	144	4.17	213	6.22	258	7.40	288	8.29	242	6.72	242

Source: country reports.

..: no data reported.

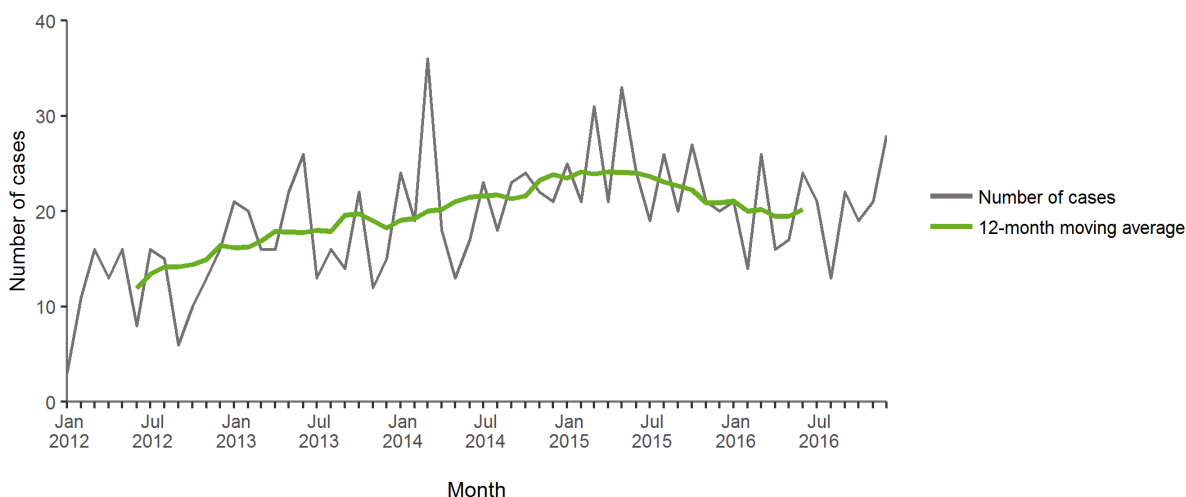
Figure 1. Distribution of confirmed toxoplasmosis cases per 100 000 population by country, EU/EEA, 2016



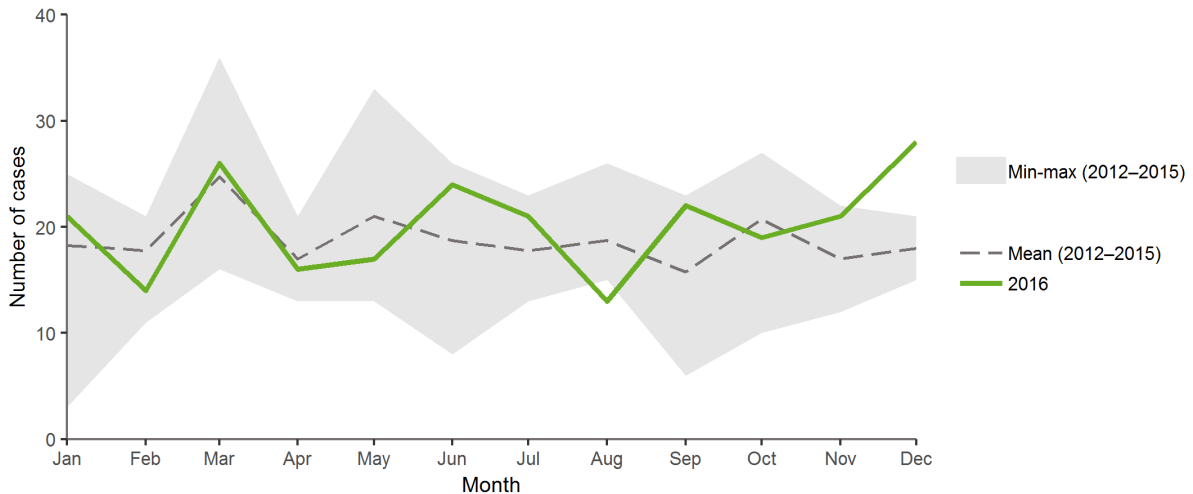
Source: Country reports from Bulgaria, Croatia, Cyprus, the Czech Republic, Estonia, Finland, France, Germany, Hungary, Iceland, Ireland, Latvia, Lithuania, Luxembourg, Malta, Poland, Romania, Slovakia, Slovenia, Spain, the United Kingdom.

In 2016, notifications of congenital toxoplasmosis decreased for the first time since 2012 (Table 1, Figure 2). Reported cases fluctuated over the year with no seasonality observed over time (Figure 3). Notifications were higher in December 2016 than the average for the same month in 2012–2015.

Figure 2. Distribution of confirmed toxoplasmosis cases by month, EU/EEA, 2012–2016



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

Figure 3. Distribution of confirmed toxoplasmosis cases by month, EU/EEA, 2012–2015 and 2016

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

Threats

No congenital toxoplasmosis threats were detected or reported to ECDC in 2016.

Discussion

Congenital toxoplasmosis in the EU/EEA increased from 2012–2015, mainly due to reporting by France, which accounted for up to 90% of all reported cases during the period. The increase was thought to be a surveillance artefact explained by varying reporting completeness of French laboratories [4]. In 2016, France accounted for the majority (81%) of the reported cases. The active screening of pregnant women in France, with follow-up during pregnancy of those who are not immune in order to detect seroconversion, and laboratory reporting of congenital toxoplasmosis cases detected during this process [5] can explain why France reports the highest rates of congenital toxoplasmosis among reporting EU/EEA countries. Only four other EU/EEA countries have compulsory screening of pregnant women for congenital toxoplasmosis (Table 2) and only two of those collect and report data to ECDC. Four other EU/EEA countries have voluntary screening, while the remainder have no targeted screening of toxoplasmosis infection in pregnant women. Because of the varying surveillance of congenital toxoplasmosis and the absence of reporting of the disease from 10 EU/EEA countries, the actual prevalence of the disease in the EU/EEA cannot be estimated.

The cost benefits of prenatal screening programmes have been questioned because of the low prevalence of congenital toxoplasmosis in the EU/EEA and uncertainty about the effectiveness of prenatal treatment [6]. A retrospective study of the Austrian national prenatal screening programme concluded that from 1992–2008, it had saved societal costs of more than EUR 15 million per year and EUR 258 million in 17 years [7]. In France, 79% of maternal infections did not result in congenital infections of newborns and birth defects occurred in fewer than 1% [5]. The authors assigned low morbidity and mortality to early diagnosis and treatment of maternal infections.

For toxoplasmosis in general, nanotechnology is currently being investigated as a tool to manage *T. gondii* infections, as well as to develop vaccines using mRNA sequences coding for disease-specific antigens [8]. These developments could be applicable in the diagnosis, treatment and possibly prevention of congenital toxoplasmosis.

Table 2. Overview of screening policies for pregnant women (ECDC survey, 2016)

Country	No screening	Compulsory screening of all pregnant women	Voluntary screening of pregnant women	Comments
Austria		x		Serological screening starting first trimester since 1974. Monthly follow-up during pregnancy of seronegative women.
Belgium		x		Serological screening starting first trimester. No consensus on follow-up during pregnancy of seronegative women.
Bulgaria			x	
Czech Republic			x	Serological screening only offered in certain regions and gynaecological outpatient wards. Screening not covered by statutory health insurance.
Denmark	x			Surveillance and screening active from 1999–2007.
Estonia	x			
France		x		Serological screening starting first trimester. Follow-up during pregnancy of seronegative women.
Germany			x	Screening not covered by statutory health insurance.
Hungary			x	
Iceland	x			Suspected cases tested on individual basis.
Lithuania				
Malta	x			
Netherlands	x			
Norway	x			
Slovakia		x		Serological screening starting first trimester. Follow-up during pregnancy of seronegative women.
Slovenia		x		
Spain				
Sweden	x			Suspected cases or high-risk women tested on individual basis.
United Kingdom	x			

Public health implications

Congenital toxoplasmosis can result in severe outcomes in infected fetuses. The burden of the disease in the EU is not possible to assess due to large differences in the setup of national surveillance systems and application of active screening and follow-up of pregnant women. Regardless of national strategies for surveillance, it is important to reinforce prevention options for congenital toxoplasmosis. Information to pregnant women should include information on risk exposures for toxoplasmosis.

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