

Congenital toxoplasmosis

Annual Epidemiological Report for 2017

Key facts

- In 2017, 194 confirmed cases of congenital toxoplasmosis were reported in the EU/EEA, with France accounting for 79% of all confirmed cases due to active screening of pregnant women.
- The overall notification rate was 5.3 cases per 100 000 live births.
- No seasonal pattern was observed for the disease.

Methods

This report is based on data for 2017 retrieved from The European Surveillance System (TESSy) on 17 September 2019. TESSy is a system for the collection, analysis and dissemination of data on communicable diseases.

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 2017. Twenty-two EU/EEA Member States reported congenital toxoplasmosis data to TESSy (21 EU Member States plus Iceland). Denmark, Italy, the Netherlands, Norway, Portugal and Sweden did not have a surveillance system for toxoplasmosis. Spain neither had national surveillance nor did it provide any estimate for population coverage, so no notification rate was calculated. Nine Member States used the case definition from 2012, nine countries used the one from 2008, one Member State reported using the one from 2002, two used another case definition, and one did not specify which definition it used. All countries report case-based data except Bulgaria, which reported aggregated data. Both reporting formats were included to calculate numbers of cases and notification rates.

Five countries (Austria, Belgium, France, Slovakia and Slovenia) have active surveillance of congenital cases with compulsory screening of pregnant women (ECDC survey, 2016; Table 2). However, Austria and Belgium do not report their data to ECDC since the disease is not notifiable in Austria; in Belgium there are no clear recommendations on the follow-up of seroconversion cases during pregnancy. Four countries (Bulgaria, the Czech Republic, Germany and Hungary) have voluntary screening. Nine have no screening policies and/or surveillance of congenital toxoplasmosis in pregnant women, but four of these countries report to ECDC (Table 2).

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France regularly reports the highest number of congenital toxoplasmosis cases, most likely due to a sensitive surveillance system that includes screening of pregnant women, follow-up of those who test negative to detect infection during pregnancy, and laboratory confirmation of any congenital toxoplasmosis cases detected during the process, including asymptomatic cases.

Table 1. 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 in first trimester since 1974. Monthly follow-up during pregnancy of seronegative women.
Belgium ⁽⁻⁾		x		Serological screening starting in 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 in 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.
Ireland ⁽⁺⁾	x			Testing for <i>Toxoplasma</i> requested if there are clinical indications, e.g. a woman is symptomatic, for investigation of late miscarriage or if there are ultrasound findings consistent with congenital toxoplasmosis.
Malta ⁽⁻⁾	x			
Netherlands ⁽⁻⁾	x			
Norway ⁽⁻⁾	x			
Slovakia ⁽⁺⁾		x		Serological screening starting in first trimester. Follow-up during pregnancy of seronegative women.
Slovenia ⁽⁺⁾		x		
Sweden ⁽⁻⁾	x			Suspected cases or women at high risk of infection tested on individual basis.
United Kingdom ⁽⁺⁾	x			
Number of countries	9	5	4	

⁽⁻⁾ Do not report to ECDC

⁽⁺⁾ Report to ECDC

Epidemiology

For 2017, 22 countries reported 194 toxoplasmosis cases, of which all were classified as confirmed. France accounted for 79% of all cases. Fourteen countries reported no cases. The number of notifications per 100 000 living newborns was 5.3 in the EU/EEA, with the highest rate in France (19.9), followed by Slovenia, Poland and Bulgaria (Table 1, Figure 1).

In 2017, gender was reported for 86% of congenital toxoplasmosis cases, with a male-to-female ratio of 0.8:1. Of 156 cases with known outcome, four were reported to have died, giving a case fatality of 2.6%.

Table 2. Distribution of confirmed congenital toxoplasmosis cases and rates per 100 000 live births, by country and year, EU/EEA, 2013–2017

Country	2013		2014		2015		2016		2017		
	Confirmed cases	Rate	Reported cases								
Austria
Belgium
Bulgaria	0	0.00	0	0.00	0	0.00	0	0.00	2	3.13	2
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	0	0.00	1	0.91	1	0.90	0	0.00	2	1.75	2

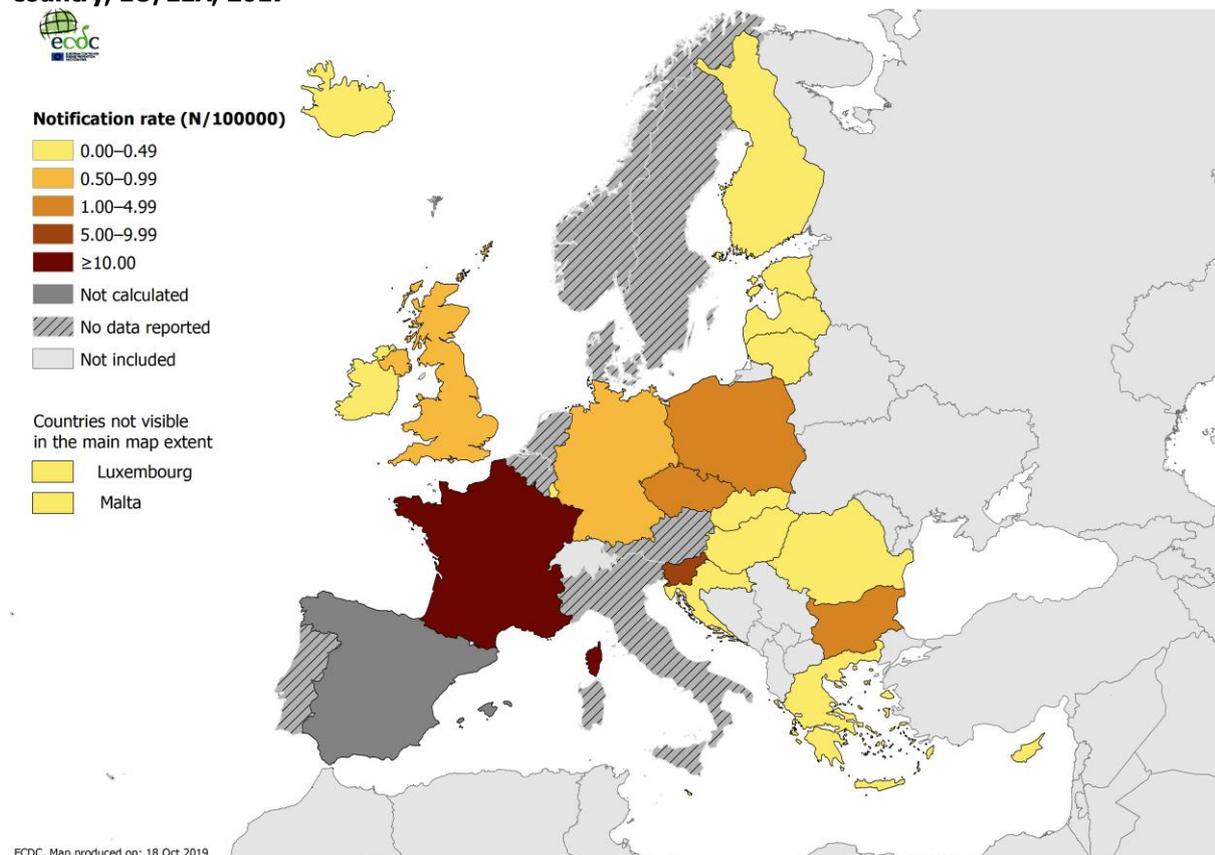
Country	2013		2014		2015		2016		2017		
	Confirmed cases	Rate	Confirmed cases	Rate	Confirmed cases	Rate	Confirmed cases	Rate	Confirmed cases	Rate	Reported cases
Denmark	.	.	.	.	.	.	.	.	.	.	.
Estonia	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0
Finland	0	0.00	0	0.00	0	0.00	1	1.89	0	0.00	0
France	179	22.04	216	26.36	246	30.76	195	24.86	153	19.87	153
Germany	10	1.47	6	0.84	15	2.03	10	1.26	7	0.89	7
Greece	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0
Hungary	0	0.00	3	3.22	1	1.09	0	0.00	0	0.00	0
Iceland	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0
Ireland	1	1.45	0	0.00	1	1.53	0	0.00	0	0.00	0
Italy	.	.	.	.	.	.	.	.	.	.	.
Latvia	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0
Liechtenstein	.	.	.	.	.	.	.	.	.	.	.
Lithuania	1	3.35	0	0.00	1	3.18	0	0.00	0	0.00	0
Luxembourg	0	0.00	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	18	4.87	20	5.33	15	4.06	20	5.23	18	4.48	18
Portugal	.	.	.	.	.	.	.	.	.	.	.
Romania	0	0.00	1	0.50	0	0.00	0	0.00	0	0.00	0
Slovakia	2	3.65	0	0.00	0	0.00	2	3.47	0	0.00	0
Slovenia	0	0.00	0	0.00	1	4.84	1	4.92	2	9.88	2
Spain	0	-	0	-	0	-	5	-	3	-	3
Sweden	.	.	.	.	.	.	.	.	.	.	.
United Kingdom	2	0.26	11	1.42	7	0.90	8	1.03	7	0.93	7
EU/EEA	213	6.22	258	7.40	288	8.28	242	6.72	194	5.32	194

Source: Country reports

.: no data reported

-.: no rate calculated

Figure 1. Distribution of confirmed congenital toxoplasmosis cases per 100 000 live births by country, EU/EEA, 2017

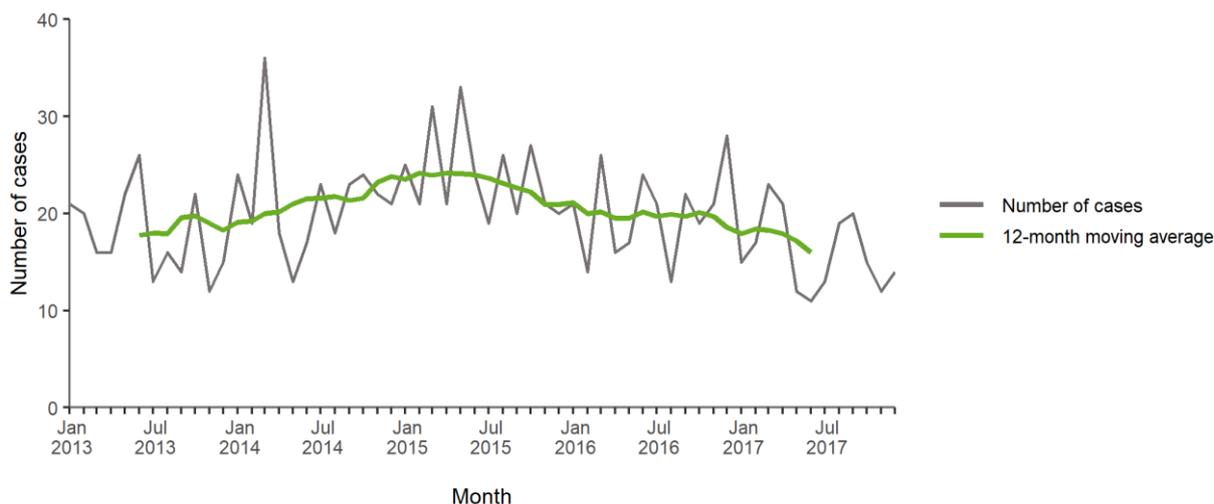


Source: Country reports from Bulgaria, Croatia, Cyprus, the Czech Republic, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Latvia, Lithuania, Luxembourg, Malta, Poland, Romania, Slovakia, Slovenia and the United Kingdom.

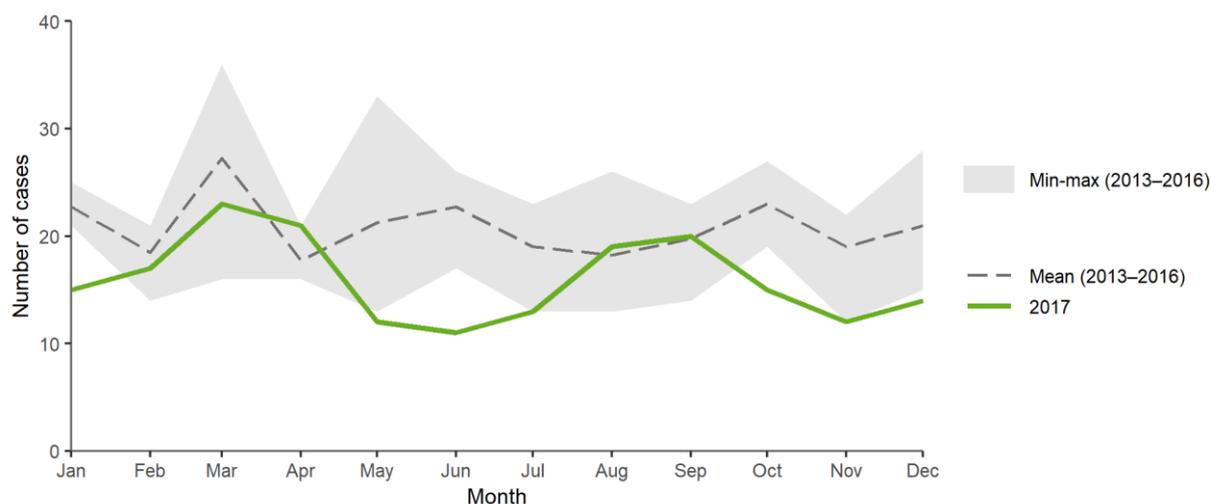
In 2017, notifications of congenital toxoplasmosis decreased for the second year in a row and reached the lowest level since 2013 (Table 1, Figure 2).

Reported cases fluctuated over the year with no discernible seasonality. Notifications were lower in May and June and October–December 2017 than the average for the same months in 2013–2016 (Figure 3).

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



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

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

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

Threats

No congenital toxoplasmosis threats were detected or reported to ECDC in 2017.

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]. 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] may explain why France reports the highest rates of congenital toxoplasmosis among reporting EU/EEA countries. In 2016–2017, cases decreased at the EU/EEA level due to decreased reporting by France which still accounted for the majority (79%) of the reported cases. Because of the varying surveillance of congenital toxoplasmosis, the absence of reporting (or zero reporting of cases) from 22 EU/EEA countries, the actual prevalence of the disease in the EU/EEA cannot be estimated. If disability-adjusted life years (DALY) per case are taken as a measure of the burden of disease, congenital toxoplasmosis, at 2.42 DALYs per case is on a level with hepatitis B and invasive pneumococcal infection in the EU/EEA [6].

The cost benefits of prenatal screening programmes have been debated because of the low prevalence of congenital toxoplasmosis in the EU/EEA and uncertainty about the effectiveness of prenatal treatment [7]. 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 [8]. In France, 79% of maternal infections did not result in clinical symptoms in newborns and birth defects occurred in fewer than 1% [5]. The authors attributed low morbidity and mortality to the early diagnosis and treatment of maternal infections.

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 [9]. These developments could prove useful in the diagnosis, treatment and possibly prevention of congenital toxoplasmosis.

Public health implications

Congenital toxoplasmosis can result in severe outcomes in infected foetuses. The burden of this form of the disease in the EU cannot be assessed due to large differences between national surveillance systems, screening programmes, 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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