



SURVEILLANCE REPORT

Echinococcosis

Annual Epidemiological Report for 2018

Key facts

- In 2018, 800 confirmed echinococcosis cases were reported in the European Union/European Economic Area (EU/EEA). Of these, 411 cases were reported as *Echinococcus granulosus*, 146 as *Echinococcus multilocularis*, and 243 were reported with unknown species.
- The EU/EEA notification rate of echinococcosis was 0.21 cases per 100 000 population.
- The highest notification rate in males was reported in those 25–44 years of age, and in females among those 45–64 years of age.

Methods

This report is based on data for 2018 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.

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].

Twenty-three countries reported echinococcosis cases using the 2008, 2012 or 2018 EU case definitions, which are identical. Luxembourg reported in accordance with the 2002 EU case definition, and three countries (Finland, France and Germany) used other/unspecified definitions. Echinococcosis is under mandatory surveillance in 24 EU/EEA countries. Surveillance is voluntary in four EU countries (Belgium, France, the Netherlands, and the United Kingdom (then a member)) [2]. Denmark and Italy have no surveillance system for echinococcosis. The United Kingdom (UK) did not report data for 2018. The majority of reporting countries provided case-based data except Belgium, Bulgaria, and the Netherlands, which reported aggregate data.

Epidemiology

For the purpose of this report, only tables, figures and a brief description of results are presented. Please refer to the 2019 and more recent annual epidemiological reports for the most up-to-date information relating to echinococcosis.

For 2018, 27 EU/EEA countries reported data on echinococcosis, with five countries reporting zero cases and 22 countries reporting 800 confirmed cases (Table 1). The highest number of cases were reported by Bulgaria,

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accounting for 26% of all confirmed cases, and Germany, accounting for 19% of confirmed cases. Three fatal cases were reported, one each in Austria, Hungary, and Spain. The fatal cases ranged in age from 44 to 77 years; one of them was due to alveolar echinococcosis, while for the other two the Echinococcus species was not reported. The EU/EEA notification rate in 2018 was 0.21 confirmed echinococcosis cases per 100 000 population, which was in a similar range to the previous four years. The highest notification rates were observed in Bulgaria (2.92 per 100 000 population) and Lithuania (1.78 per 100 000 population) (Table 1, Figure 1).

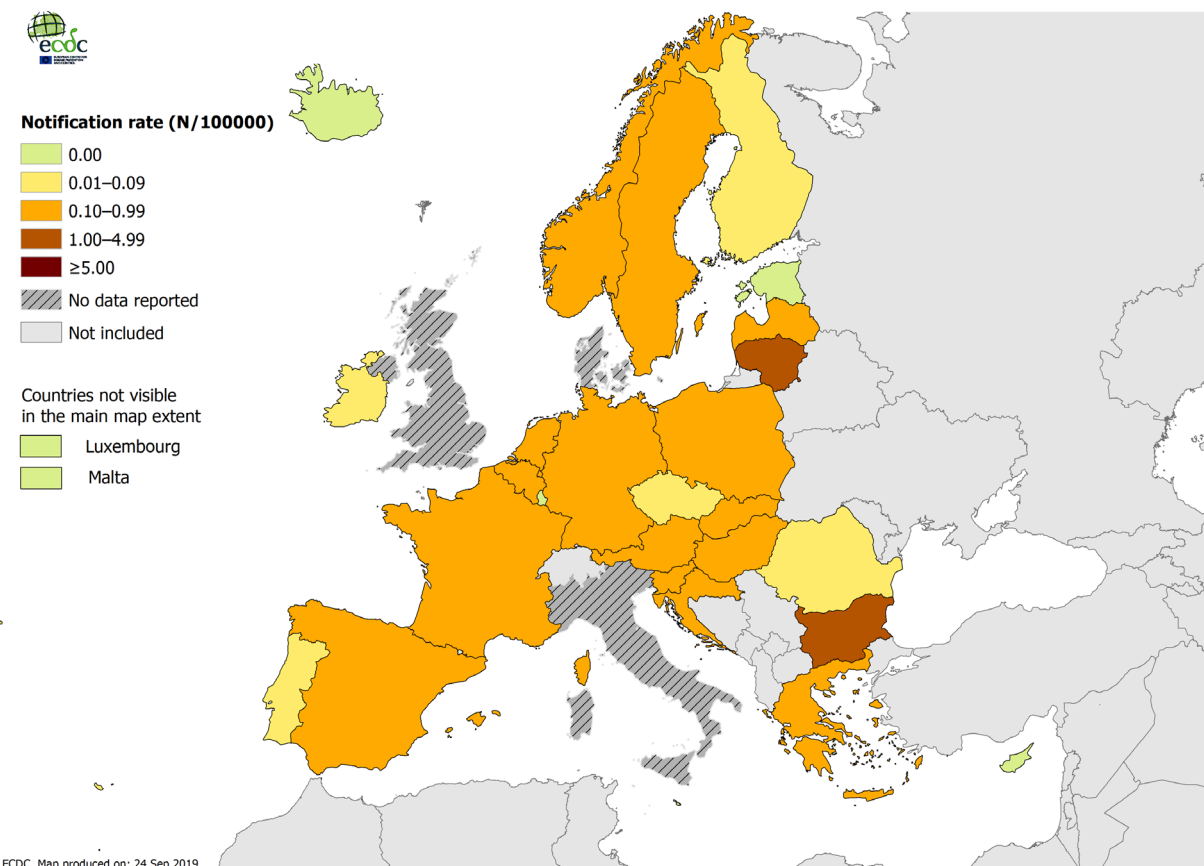
Table 1. Number of confirmed echinococcosis cases and rates per 100 000 population by country, EU/EEA, 2014–2018

Country	2014		2015		2016		2017		2018			
	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Confirmed cases	Rate	ASR	Reported cases
Austria	14	0.16	8	0.09	26	0.30	50	0.57	46	0.52	0.52	46
Belgium	15	NR	9	0.08	17	0.15	12	0.11	14	0.12	NR	14
Bulgaria	302	4.17	313	4.35	269	3.76	218	3.07	206	2.92	3.02	206
Croatia	20	0.47	7	0.17	9	0.21	15	0.36	4	0.10	0.09	7
Cyprus	0	0.00	2	0.24	0	0.00	0	0.00	0	0.00	0.00	0
Czech Republic	6	0.06	3	0.03	4	0.04	1	0.01	4	0.04	0.04	5
Denmark	ND	NR	ND	NR	ND	NR	ND	NR	ND	NR	NR	ND
Estonia	1	0.08	0	0.00	0	0.00	1	0.08	0	0.00	0.00	0
Finland	0	0.00	2	0.04	4	0.07	5	0.09	1	0.02	0.02	1
France	32	0.05	48	0.07	38	0.06	53	0.08	62	0.09	0.09	62
Germany	131	0.16	157	0.19	180	0.22	141	0.17	155	0.19	0.19	155
Greece	13	0.12	13	0.12	18	0.17	15	0.14	11	0.10	0.10	11
Hungary	2	0.02	2	0.02	5	0.05	14	0.14	9	0.09	0.09	9
Iceland	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0.00	0
Ireland	0	0.00	0	0.00	2	0.04	0	0.00	2	0.04	0.05	2
Italy	ND	NR	ND	NR	ND	NR	ND	NR	ND	NR	NR	ND
Latvia	13	0.65	10	0.50	11	0.56	6	0.31	10	0.52	0.48	10
Liechtenstein	ND	NR	ND	NR	ND	NR	ND	NR	ND	NR	NR	ND
Lithuania	22	0.75	33	1.13	26	0.90	53	1.86	50	1.78	1.66	50
Luxembourg	0	0.00	0	0.00	0	0.00	2	0.34	0	0.00	0.00	0
Malta	0	0.00	0	0.00	1	0.22	0	0.00	0	0.00	0.00	0
Netherlands	37	0.22	64	0.38	33	0.19	38	0.22	42	0.24	0.25	42
Norway	0	0.00	2	0.04	3	0.06	6	0.11	7	0.13	0.14	7
Poland	48	0.13	47	0.12	64	0.17	75	0.20	51	0.13	0.13	51
Portugal	4	0.04	4	0.04	2	0.02	2	0.02	9	0.09	0.08	9
Romania	31	0.16	18	0.09	13	0.07	14	0.07	4	0.02	0.02	4
Slovakia	8	0.15	5	0.09	4	0.07	7	0.13	10	0.18	0.19	10
Slovenia	5	0.24	7	0.34	3	0.15	7	0.34	6	0.29	0.27	6
Spain	70	0.15	83	0.18	87	0.19	83	0.18	68	0.15	0.14	68
Sweden	21	0.22	26	0.27	27	0.27	34	0.34	29	0.29	0.30	29
United Kingdom	25	0.04	26	0.04	ND	NR	4	0.01	ND	NR	NR	ND
EU/EEA	820	0.19	889	0.20	846	0.22	856	0.19	800	0.21	0.21	804

ND: no data reported, NR: no rate calculated, ASR: age-standardised rate

Denmark and Italy have no surveillance system for echinococcosis. Data were not reported by Liechtenstein (for all years) or the UK (in 2016 and 2018); the reasons for this are unclear.

Figure 1. Distribution of confirmed echinococcosis cases per 100 000 population by country, EU/EEA, 2018

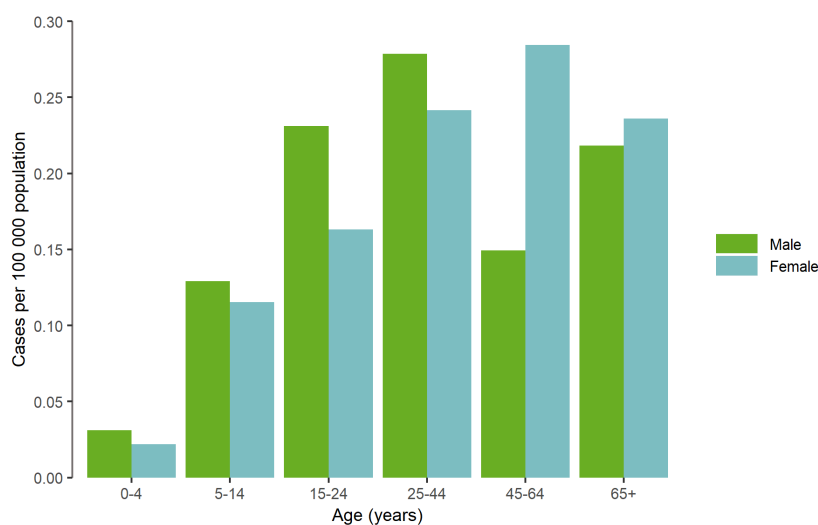


Sources: Country reports from Austria, Belgium, Bulgaria, Croatia, Cyprus, Czechia, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, and Sweden.

The male-to-female ratio was 0.9:1. The notification rate in males was highest among people aged 25–44 years, while in females among people aged 45–64 years (Figure 2).

Of cases with known importation status (n=301), 44% were reported to have been infected outside of the reporting country in 2018. Of those, 16% were most likely infected in another EU/EEA country while 60% in a country outside of the EU/EEA (and 24% of cases had unknown country of infection).

Figure 2. Distribution of confirmed echinococcosis cases per 100 000 population, by age and sex, EU/EEA, 2018



Echinococcosis by species

Species information was known for 67% of confirmed cases from 15 countries (information from Bulgaria was received via email due to aggregate reporting and included in the results by species).

Echinococcus granulosus

Fifteen countries reported 411 confirmed cases of *E. granulosus* sensu lato (s.l.) (cystic echinococcosis) in 2018 (Table 2). Bulgaria accounted for 50% of the cases in 2018 and Germany for 20%. Approximately one third (38%) of cystic echinococcosis cases in EU/EEA countries in 2018 was observed in the age group 25–44 years, followed by the age group 45–64 years (24%). There were slightly more cases in males than in females (221 compared to 189). In the five-year period between 2014 and 2018, there was a significantly increasing trend of *E. granulosus* in the EU/EEA overall [4]. Bulgaria, which reported most of the cases with *E. granulosus* s.l., was not included in the EU/EEA trend calculations as no monthly data were available. The number of cases in Bulgaria decreased by 32%, from 302 cases in 2014 to 206 cases in 2018. Statistically significant ($p \leq 0.01$) increasing trends by country were observed in Austria, Portugal, and Spain. The proportion of cases reported to have been infected outside of the reporting country decreased from 81% in the peak year of 2015 to 66% in 2018 (aggregate data not included).

Echinococcus multilocularis

Nine countries reported 146 cases of *E. multilocularis* (alveolar echinococcosis) in 2018 (Table 2). Germany and France accounted for 62% of the reported *E. multilocularis* cases in the EU/EEA in 2018. Most cases were reported in the age groups ≥ 65 years (36%) and 45–64 years (35%), and 56% of the cases were in females. In the five-year period between 2014 and 2018, the number of *E. multilocularis* infections was stable in the EU/EEA overall and by country [4]. In 2018, similarly to previous years, 89% of cases with *E. multilocularis* were reported to have been infected within the reporting country.

Table 2. Reported confirmed echinococcosis cases, by species, EU/EEA, 2018 and average 2014-2017

Country	Confirmed echinococcosis cases		<i>E. granulosus</i>		<i>E. multilocularis</i>		Species unknown/ not reported	
	Avg 2014-2017	2018	Avg 2014-2017	2018	Avg 2014-2017	2018	Avg 2014-2017	2018
Austria	25	46	18	29	4	12	2	5
Belgium	13	14	UNK	UNK	UNK	UNK	13	14
Bulgaria	276	206	276	206	0	0	0	0
Croatia	13	4	UNK	UNK	UNK	UNK	13	4
Cyprus	1	0	UNK	0	UNK	0	1	0
Czechia	4	4	UNK	1	UNK	2	4	1
Estonia	1	0	0	0	1	0	0	0
Finland	3	1	2	1	UNK	0	1	0
France	43	62	1	21	42	41	0	0
Germany	152	155	92	83	40	49	21	23
Greece	15	11	UNK	UNK	UNK	UNK	15	11
Hungary	6	9	1	UNK	UNK	UNK	5	9
Iceland	0	0	0	0	0	0	0	0
Ireland	1	2	0	0	0	0	0	2
Latvia	10	10	3	5	UNK	1	7	4
Lithuania	34	50	9	11	12	17	12	22
Luxembourg	1	0	1	0	0	0	0	0
Malta	0	0	0	0	0	0	0	0
Netherlands	43	42	UNK	UNK	UNK	UNK	43	42
Norway	3	7	1	5	UNK	UNK	1	2
Poland	59	51	17	17	23	19	19	15
Portugal	3	9	1	9	UNK	0	2	0
Romania	19	4	2	UNK	UNK	UNK	17	4
Slovakia	6	10	3	3	3	3	1	4
Slovenia	6	6	UNK	3	UNK	UNK	5	3
Spain	81	68	3	12	UNK	UNK	78	56
Sweden	27	29	13	5	1	2	13	22
United Kingdom	18	ND	18	ND	0	ND	0	ND
EU/EEA	858	800	460	411	125	146	273	243

UNK: Species unknown

ND: no data reported

Public health implications

Reporting of echinococcosis cases should include species information and preferably data collected at the NUTS-2 or NUTS-3 level. This would allow for a more complete monitoring of cases, foster a better understanding of the epidemiology of these diseases, improve monitoring of spatial and temporal trends, and ultimately enable the design and evaluation of targeted prevention and control actions.

References

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