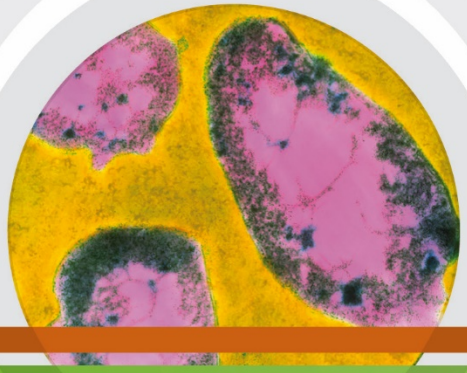


SURVEILLANCE REPORT

Annual Epidemiological Report for 2016

Tularaemia

Key facts

- For 2016, 1 148 cases of tularaemia were reported in the EU/EEA, 1 096 (95%) of which were confirmed.
- Finland accounted for 61% of the reported cases in EU/EEA countries for 2016.
- The EU/EEA notification rate for 2016 was 0.2 cases per 100 000 population.
- As in previous years, the proportion of male cases was higher in all age groups, with a male-to-female ratio of 1.3:1. Notification rates in men and women increased with age. The highest rate was observed in men in the age group 45–64 years (0.4 cases per 100 000 population).

Methods

This report is based on data for 2016 retrieved from The European Surveillance System (TESSy) on 4 April 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].

For 2016, 28 EU/EEA countries reported data on tularaemia (Denmark, Malta and Liechtenstein did not report). Twenty-five countries reported case-based data and three countries (Belgium, Bulgaria and Croatia) reported aggregated data. Twenty-four countries used the EU case definition, two countries used an alternative case definition (Germany and Italy) and two countries did not specify the case definition they used (Finland and France). Reporting is compulsory in 27 countries and voluntary in the United Kingdom. Surveillance is comprehensive in all reporting countries and mostly passive.

Epidemiology

For 2016, 1 148 cases were reported in the EU/EEA, 1 096 (95%) of which were confirmed (Table 1, Figure 1). Nine countries (Cyprus, Greece, Iceland, Ireland, Italy, Luxembourg, Portugal, Romania and the United Kingdom) reported no cases. Most cases for 2016 were reported by Finland (n=699) and Sweden (n=134). Finland accounted for 61% of all cases reported for 2016.

Suggested citation: European Centre for Disease Prevention and Control. Tularaemia. In: ECDC. Annual epidemiological report for 2016. Stockholm: ECDC; 2019.

Stockholm, January 2019

The overall notification rate was 0.2 cases per 100 000 population, a decrease compared with the previous year (0.3 cases per 100 000 population). The notification rate was highest in Finland (12.7 per 100 000), significantly exceeding the rates of the previous four years (between 0.2 and 4.3 per 100 000) and the highest reported in the past five years for any EU/EEA country. Age-standardised notification rates did not differ substantially from crude rates.

Table 1. Distribution of confirmed tularaemia cases by country and year, EU/EEA, 2012–2016

Country	2012		2013		2014		2015		2016			
	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Confirmed cases	Rate	ASR	Reported cases
Austria	2	0.0	2	0.0	0	0.0	4	0.0	9	0.1	0.1	9
Belgium	1	0.0	1	0.0	2	0.0	1	0.0	1	0.0	-	1
Bulgaria	0	0.0	1	0.0	1	0.0	17	0.2	2	0.0	0.0	3
Croatia	1	0.0	2	0.0	2	0.0	13	0.3	2	0.0	-	2
Cyprus	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0.0	0
Czech Republic	42	0.4	36	0.3	48	0.5	56	0.5	59	0.6	0.6	59
Denmark	.	.	.	.	.	.	.	.	.	.	.	.
Estonia	0	0.0	1	0.1	1	0.1	0	0.0	1	0.1	0.1	1
Finland	233	4.3	15	0.3	9	0.2	104	1.9	699	12.7	12.5	699
France	5	0.0	21	0.0	19	0.0	28	0.0	47	0.1	0.1	98
Germany	21	0.0	20	0.0	21	0.0	34	0.0	41	0.0	0.1	41
Greece	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0.0	0
Hungary	18	0.2	48	0.5	140	1.4	35	0.4	22	0.2	0.2	22
Iceland	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0.0	0
Ireland	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0.0	0
Italy	4	0.0	1	0.0	0	0.0	.	.	0	0.0	0.0	0
Latvia	6	0.3	0	0.0	0	0.0	0	0.0	1	0.1	0.1	1
Liechtenstein	.	.	.	.	.	.	.	.	.	.	.	.
Lithuania	3	0.1	4	0.1	4	0.1	4	0.1	2	0.1	0.1	2
Luxembourg	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0.0	0
Malta	0	0.0	0	0.0	0	0.0	.	.	.	.	.	.
Netherlands	.	.	0	0.0	5	0.0	1	0.0	5	0.0	0.0	5
Norway	50	1.0	28	0.6	46	0.9	42	0.8	40	0.8	0.8	40
Poland	6	0.0	8	0.0	11	0.0	9	0.0	18	0.0	0.0	18
Portugal	.	.	.	.	.	.	0	0.0	0	0.0	0.0	0
Romania	0	0.0	1	0.0	0	0.0	1	0.0	0	0.0	0.0	0
Slovakia	8	0.1	9	0.2	6	0.1	28	0.5	7	0.1	0.1	7
Slovenia	4	0.2	2	0.1	1	0.0	0	0.0	3	0.1	0.2	3
Spain	1	0.0	0	0.0	62	0.1	22	0.0	3	0.0	0.0	3
Sweden	590	6.2	108	1.1	150	1.6	722	7.4	134	1.4	1.4	134
United Kingdom	0	0.0	0	0.0	0	0.0	1	0.0	0	0.0	0.0	0
EU/EEA	**995**	**0.2**	**308**	**0.1**	**528**	**0.1**	**1 122**	**0.3**	**1 096**	**0.2**	**0.2**	**1 148**

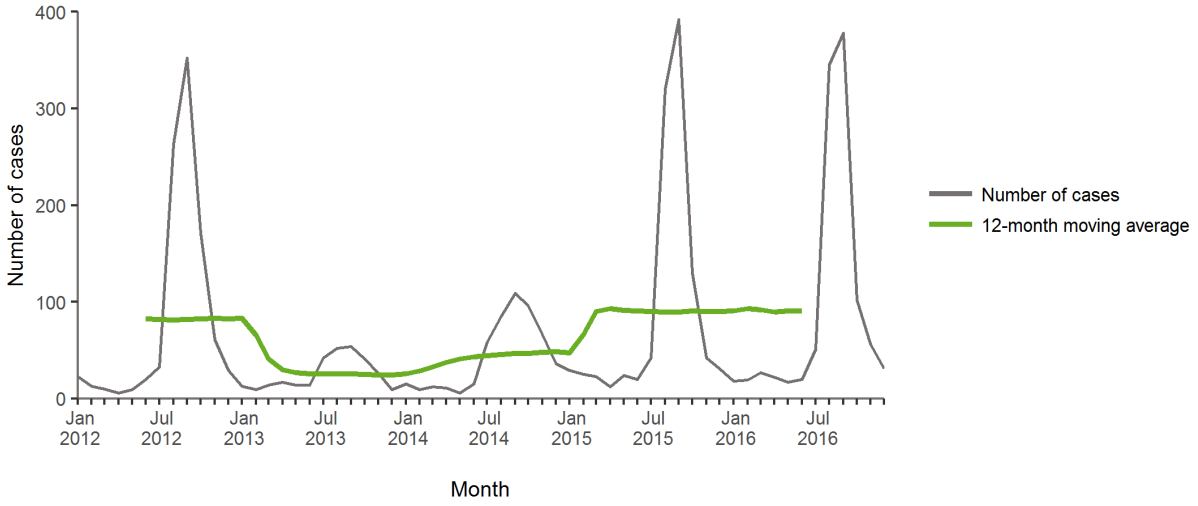
ASR: age-standardised rate
-: no rate calculated
.: no data reported.

Figure 1. Distribution of confirmed tularaemia cases by country, EU/EEA, 2016

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

Between 2012 and 2016, no significant trend in the number of reported cases was observed. However, three peaks in the number of cases were observed in 2012, 2015 and 2016. These peaks were due to high numbers of reported cases in Finland and Sweden.

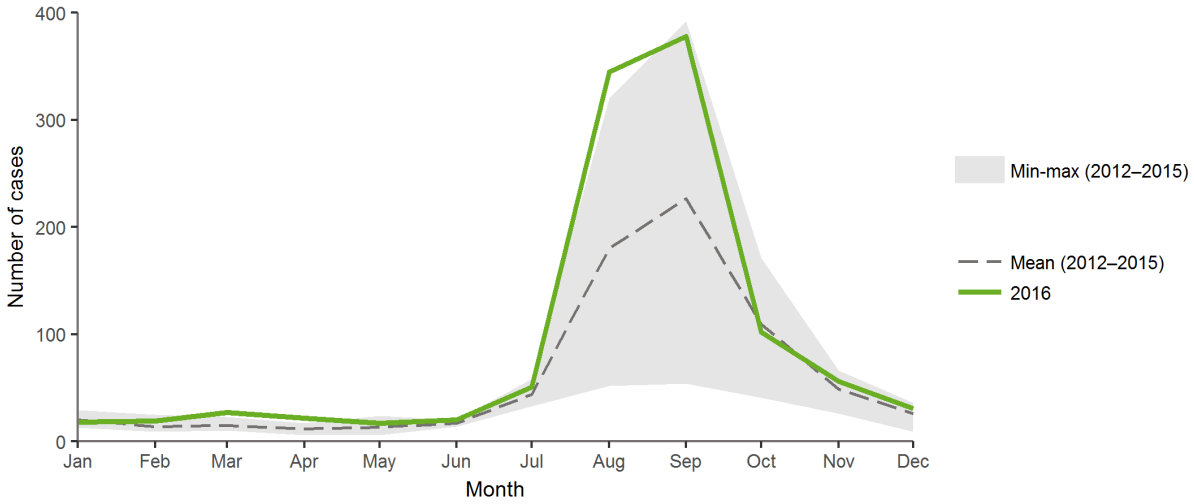
Figure 2. Distribution of confirmed tularaemia cases by month, EU/EEA, 2012–2016



Source: Country reports from Austria, Belgium, Bulgaria, Croatia, the Czech Republic, Estonia, Finland, France, Germany, Hungary, Latvia, Lithuania, Norway, Poland, Romania, Slovakia, Slovenia, Spain, Sweden and the United Kingdom.

Tularaemia shows a seasonal pattern, with most cases occurring between August and October, but some cases also occurred in the winter. The 2016 peak of infections was recorded in September, which is consistent with previous years, although above the mean observed during the 2012–2015 period (Figure 3).

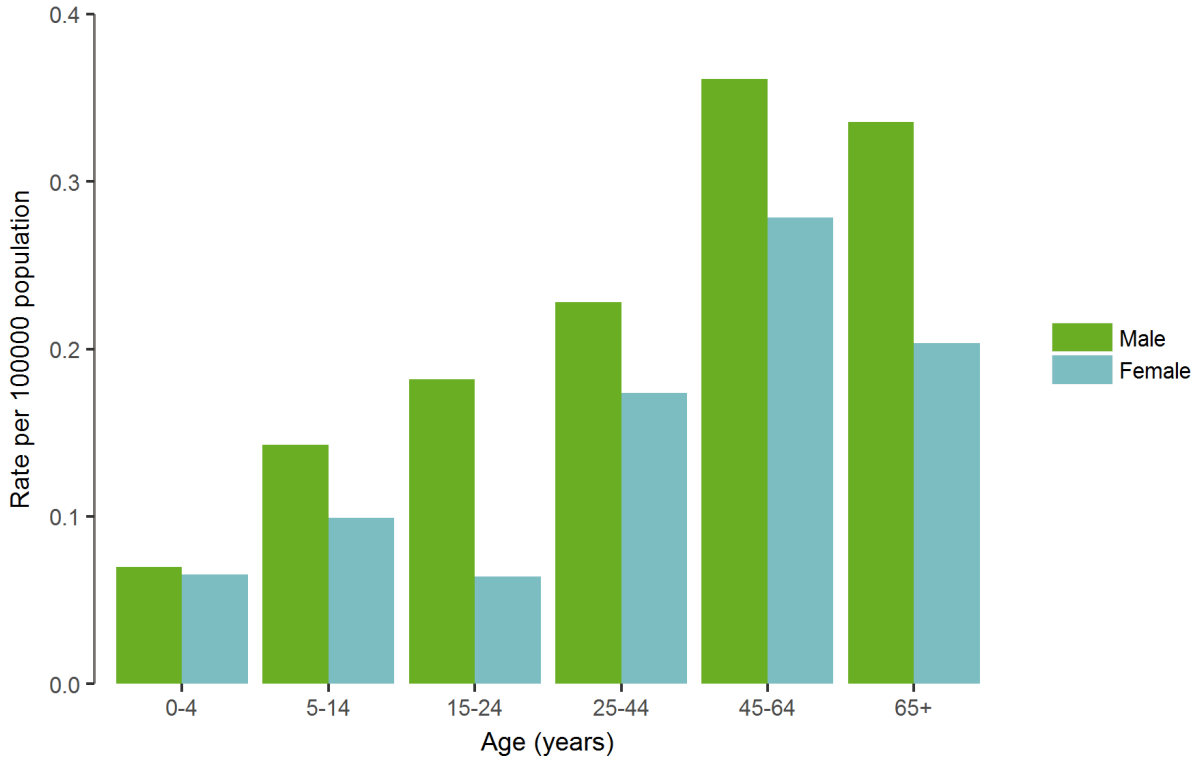
Figure 3. Distribution of confirmed tularaemia cases by month, EU/EEA, 2012–2015 and 2016



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

As in previous years, the proportion of male cases was higher in all age groups, with a male-to-female ratio of 1.3:1. Notification rates in men and women increased with age and were highest in the age group 45–64 years (0.4 and 0.3 cases per 100 000 population respectively).

Figure 4. Distribution of confirmed tularaemia cases per 100 000 population by age and gender, EU/EEA, 2016



Discussion

In Europe, the ingestion of contaminated water from streams, ponds, lakes and rivers is the main transmission route of tularaemia [4]. However, in the endemic regions of Sweden and Finland, tularaemia is typically transmitted by mosquito bites [5,6]. The disease shows a clear seasonality in humans consistent with greater exposure to contaminated water and mosquito activity during the summer and early autumn months.

Notification rates of tularaemia vary considerably among Member States and over time. In previous years, Sweden had the highest notification rate. In 2016, Finland had the highest rate observed among Member States in the previous five years. In Finland, tularaemia outbreaks are preceded one year earlier by a peak in vole populations [7]. Such an increase in voles was observed in 2015 and coupled with climatic conditions in 2016 that contributed to an abundant mosquito population, favoured transmission to humans. Complex epidemiological features of *F. tularensis* infections in Europe are covered in a recent review article [8].

Data on tularaemia surveillance in animals in the European region are available in the annual ECDC/EFSA report on trends and sources of zoonoses, zoonotic agents and food-borne outbreaks [9].

Public health implications

Tularaemia is a zoonosis not transmissible from human to human [4]. Physicians should be aware of any clinical presentation of tularaemia and consider tularaemia as a possible diagnosis in any case of culture-negative endocarditis.

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