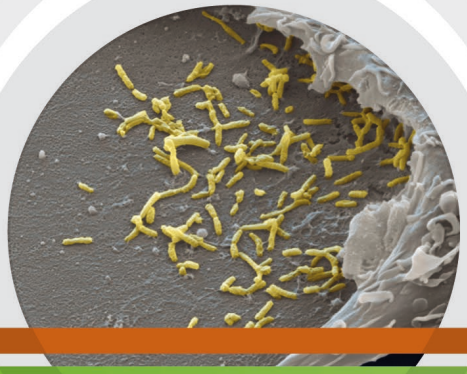


SURVEILLANCE REPORT

Annual Epidemiological Report for 2016

Q fever

Key facts

- For 2016, 1 102 cases of Q fever were reported in the EU/EEA, 1 058 (96%) of which were confirmed.
- The EU/EEA notification rate for 2016 was 0.2 cases per 100 000 population.
- In 2016, cases occurred all year round not showing the seasonality observed in previous years.
- Except for women aged over 65 years, the rate of reported Q fever cases increased with age and was higher among men than women.

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, 29 EU/EEA countries reported data (Austria and Liechtenstein did not report). All data were case-based except for data from Belgium, Bulgaria and Croatia. Twenty-two countries used the EU case definition, five countries used an alternative case definition (Denmark, France, Germany, Italy and Romania) and two countries did not specify the case definition they used (Belgium and Finland). Reporting was compulsory in 27 countries and voluntary in France and the UK. Surveillance was comprehensive in all reporting countries except for Spain, where it was specified as 'other' and mostly passive.

Epidemiology

For 2016, 29 countries reported 1 102 cases, 1 058 (96%) of which were classified as confirmed (Table 1). Nine countries reported no cases compared with seven and eight countries in 2015 and 2014 respectively. Seven countries reported between one and three confirmed cases, the same number as in 2015. The highest numbers of confirmed cases were reported by Spain, Germany and France (Table 1, Figure 1). Germany, France and Spain accounted for most of the confirmed cases reported in the last five years (2012–2016), with 1 130, 873 and 638 confirmed cases respectively.

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

Stockholm, January 2019

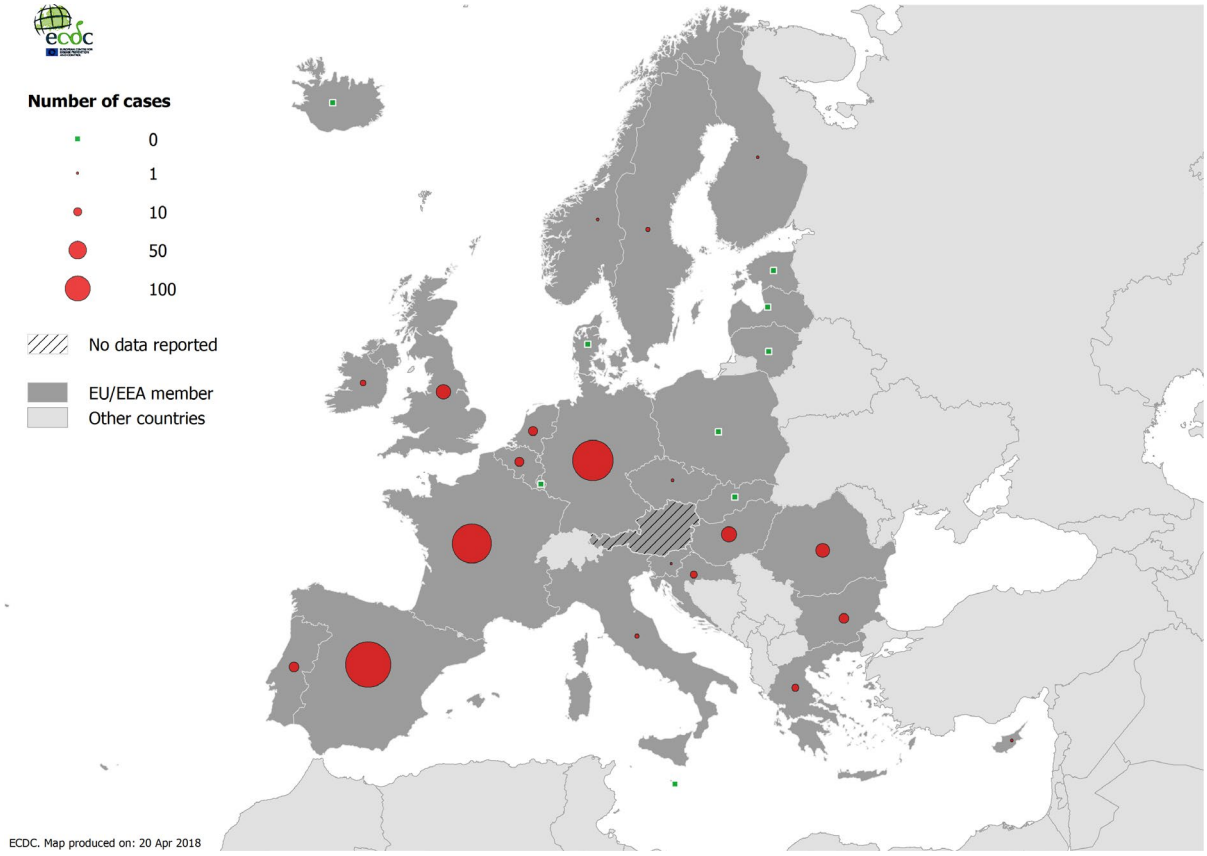
The number of notifications per 100 000 inhabitants was 0.2 for 2016, the same as the previous two years, compared with 0.1 in 2012 and 2013. The highest notification rate (0.4 cases per 100 000 population) was observed in France and Hungary (Table 1). Age-standardised notification rates did not differ significantly from crude rates. However, the number of cases reported for 2016 was notably higher than 2012– 2015 and has steadily increased since 2012. The increase from 2015 to 2016 was mainly due to an increase in the number of cases reported by Spain, where the reporting system changed.

Table 1. Distribution of confirmed Q fever 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	.	.	.	.	.	.	.	.	.	.	.	.
Belgium	18	0.2	5	0.0	4	0.0	8	0.1	15	0.1	0.1	21
Bulgaria	29	0.4	23	0.3	15	0.2	15	0.2	17	0.2	0.2	19
Croatia	43	1.0	0	0.0	21	0.5	14	0.3	8	0.2	-	8
Cyprus	4	0.5	3	0.3	1	0.1	4	0.5	2	0.2	0.3	3
Czech Republic	1	0.0	0	0.0	0	0.0	1	0.0	2	0.0	0.0	2
Denmark	.	.	.	.	.	.	0	0.0	0	0.0	0.0	0
Estonia	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0.0	0
Finland	0	0.0	5	0.1	0	0.0	3	0.1	2	0.0	0.0	2
France	5	0.0	158	0.2	209	0.3	250	0.4	251	0.4	0.4	251
Germany	198	0.2	114	0.1	238	0.3	310	0.4	270	0.3	0.3	275
Greece	11	0.1	11	0.1	15	0.1	10	0.1	9	0.1	0.1	9
Hungary	36	0.4	135	1.4	59	0.6	35	0.4	39	0.4	0.4	39
Iceland	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0.0	0
Ireland	5	0.1	0	0.0	0	0.0	4	0.1	6	0.1	0.1	6
Italy	.	.	.	.	.	.	.	.	3	0.0	0.0	5
Latvia	1	0.0	1	0.0	3	0.1	1	0.1	0	0.0	0.0	0
Liechtenstein	.	.	.	.	.	.	.	.	.	.	.	.
Lithuania	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0.0	0
Luxembourg	0	0.0	0	0.0	0	0.0	1	0.2	0	0.0	0.0	0
Malta	0	0.0	2	0.5	0	0.0	0	0.0	0	0.0	0.0	0
Netherlands	63	0.4	20	0.1	26	0.2	20	0.1	14	0.1	0.1	14
Norway	0	0.0	4	0.1	1	0.0	1	0.0	2	0.0	0.0	2
Poland	0	0.0	0	0.0	1	0.0	0	0.0	0	0.0	0.0	0
Portugal	26	0.2	21	0.2	25	0.2	20	0.2	17	0.2	0.2	17
Romania	16	0.1	24	0.1	21	0.1	3	0.0	32	0.2	0.2	33
Slovakia	0	0.0	0	0.0	1	0.0	0	0.0	0	0.0	0.0	0
Slovenia	1	0.0	1	0.0	3	0.1	1	0.0	1	0.0	0.0	1
Spain	58	-	75	-	77	-	97	-	331	.	.	358
Sweden	2	0.0	3	0.0	2	0.0	4	0.0	3	0.0	0.0	3
United Kingdom	12	0.0	46	0.1	60	0.1	21	0.0	34	0.1	0.1	34
EU/EEA	**529**	**0.1**	**651**	**0.1**	**782**	**0.2**	**823**	**0.2**	**1 058**	**0.2**	**0.2**	**1 102**

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

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



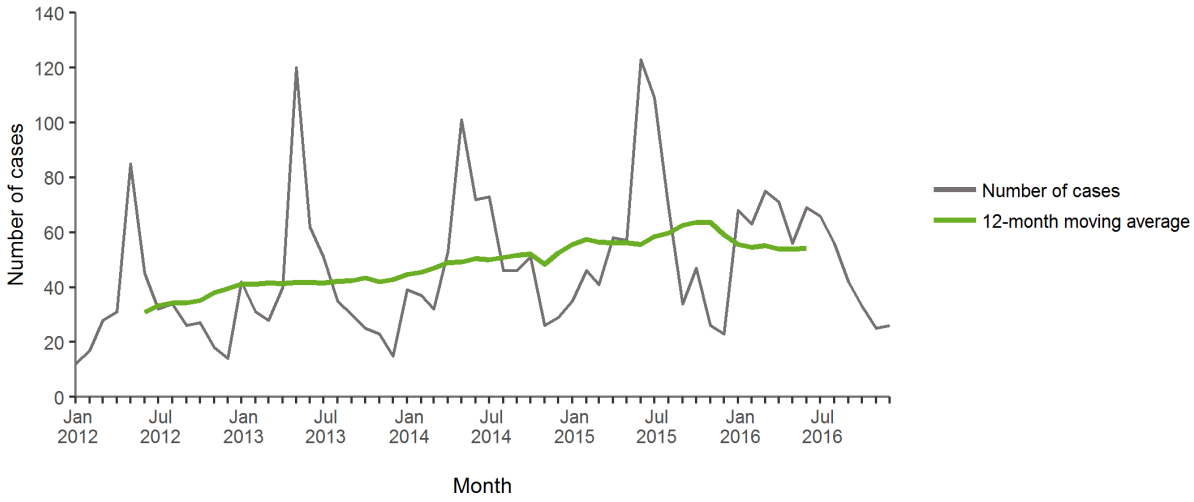
Source: Country reports from Belgium, Bulgaria, Croatia, Cyprus, the Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden and the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

The majority of Q fever cases in the EU/EEA was domestically acquired. The Czech Republic, Germany, Italy, the Netherlands, Norway, Spain and Sweden reported travel-associated cases. Of the 47 travel-associated cases reported, 11 were acquired in other EU/EEA countries.

Three deaths due to Q fever were reported for 2016 in the EU/EEA (two in Spain and one in Hungary), resulting in an EU/EEA case fatality of 0.5% among the 553 confirmed cases with reported outcome.

While the overall number of reported cases steadily increased over the 2012–2016 period (Table 1), the trend for countries reporting consistently in the past five years increased from 2012 to 2015, but decreased in 2016 (Figure 2).

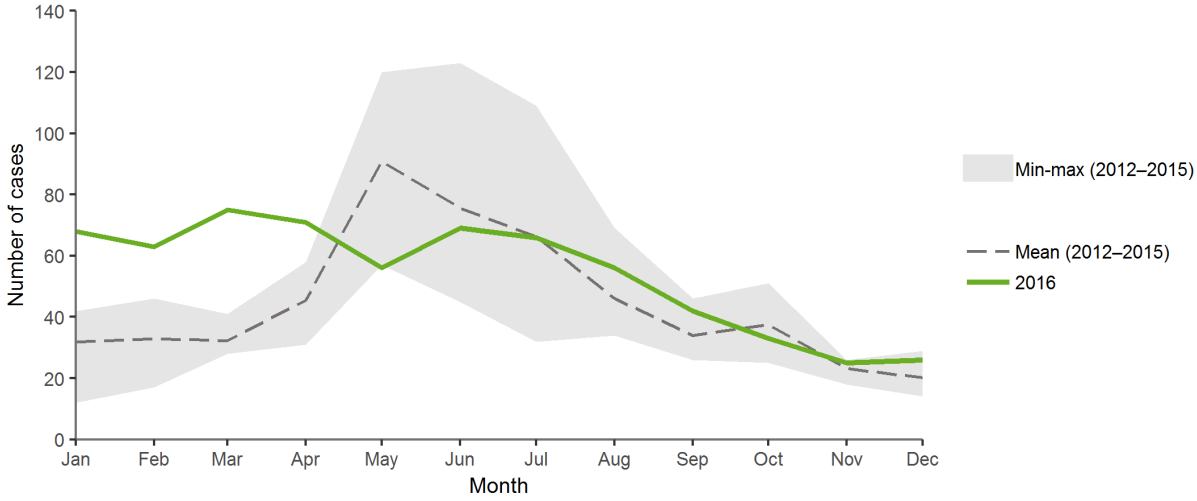
Figure 2. Distribution of confirmed Q fever cases by month, EU/EEA, 2012–2016



Source: Country reports from Cyprus, the Czech Republic, Finland, France, Germany, Greece, Hungary, Ireland, Latvia, Luxembourg, Malta, the Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia and Sweden.

Cases occurred year-round (Figure 3). The distribution of confirmed cases by month for 2016 did not follow the clear seasonality of previous years. Higher case numbers were reported from January to April by Spain, Germany and France and no peak was detected in May, mainly due to the consistently higher case numbers reported by France and Germany from January to August.

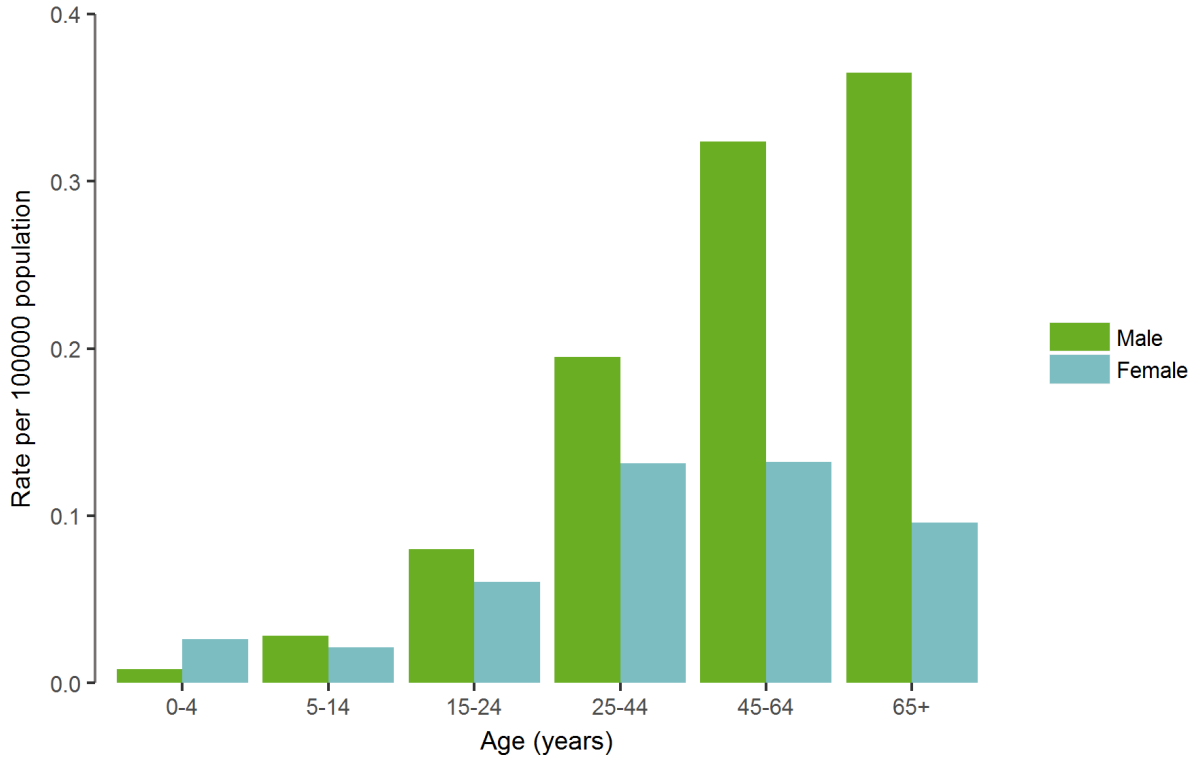
Figure 3. Distribution of confirmed Q fever cases by month, EU/EEA, 2012–2015 and 2016



Source: Country reports from Cyprus, the Czech Republic, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia and Sweden.

In 2016, teenagers above 14 years of age and adults accounted for 1 025 of 1 046 cases (98%) with known age. The rate of confirmed human Q fever cases was higher among men than women in all age groups (0.22 cases compared with 0.10 cases per 100 000 population) except for the age group 0-4 years. The male-to-female ratio was 2.2:1. Notification rates in men and women increased with age except for women in the age group over 64 years. The highest notification rate was among men in the age group over 64 years (0.36 cases per 100 000 population), followed by the age group 45–64 years (0.32 per 100 000). Among women, the highest notification rate was observed in the age groups 25–44 years and 45–64 years (0.13 per 100 000).

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



Discussion

Between 2012 and 2016, the overall number of human Q fever cases reported in the EU/EEA steadily increased. While France and Germany have reported the majority of confirmed human cases since 2012, Spain saw over three times as many cases in 2016 compared with 2015 and accounted for more than a third of all cases reported in the EU/EEA. The peak in Spain is mostly explained by the reporting system changing from voluntary to compulsory. After several consecutive years of increase in France and Germany, numbers reported in 2016 were, equivalent to and lower than in 2015 respectively.

Despite the increase in cases between 2015 and 2016, the EU/EEA rate did not increase. This is due to the fact that Italy started to report very few cases in 2016 while considerably enlarging the population denominator. Besides the change in reporting systems in certain Member States, there is no obvious explanation for the increasing case numbers in the EU between 2012 and 2016. Among countries consistently reporting in the past five years, the pre-existing increasing trend did not continue in 2016.

Data on Q fever surveillance in animals in the European region are available in the ECDC/EFSA report on trends and sources of zoonoses, zoonotic agents and food-borne outbreaks [4].

Public health implications

Good hygiene practices in premises dealing with animals, particularly sheep and goats, help prevent transmission of Q fever. As the disease can be transmitted to humans through contaminated milk, pasteurisation of milk and milk products prevents infection. Severe disease has been reported in foetuses and newborn babies; pregnant women and infants should therefore avoid contact with farm animals. Furthermore, transmission has occurred through fresh cell therapy [5]. Countries may consider regulating such practices and establishing national systems to monitor xenotransplantation. In rare occasions, transmission can also occur through bites of infected ticks [6]. Exposure to infected ticks should be avoided or minimised by using tick repellents, wearing protective clothing and early and correct removal of ticks.

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