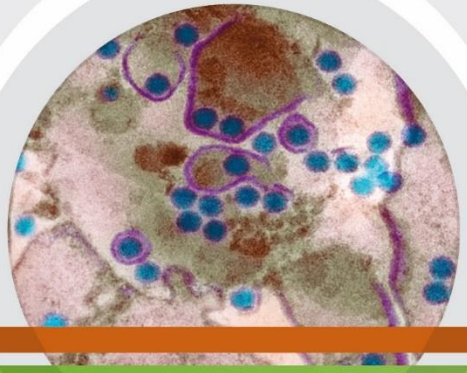


SURVEILLANCE REPORT

Annual Epidemiological Report for 2015

Chikungunya fever

Key facts

- 624 cases were reported in TESSy in 2015, of which 478 (76.6%) were confirmed.
- Notification rate in 2015 was 0.1 cases per 100 000 population.
- All 580 cases with known importation status were imported from outside the EU/EEA.
- There was a decrease of 57.3% in cases compared with 2014.
- The age-specific rate of reported cases was the highest among the age groups 25–44 and 45–64 years.
- The highest rates were reported in females, except for the age group 5–14 years.
- Case numbers peaked in January and to a lesser extent in May–June.
- Most cases were infected in the Americas.

Methods

This report is based on data for 2015 retrieved from The European Surveillance System (TESSy) on 30 June 2017. 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].

Of the 24 EU/EEA countries that reported chikungunya cases to TESSy, eleven reported zero cases. No data were available from Austria, Bulgaria, Cyprus, Denmark, Iceland, Liechtenstein and Norway.

Data for chikungunya fever reported within the EU/EEA are very heterogeneous as there is no specific case definition for chikungunya. Sixteen countries used the generic EU case definition for all viral haemorrhagic fevers, five countries did not specify which case definition was used (Belgium, Finland, France, Greece and Latvia), and three countries used a different case definition (the Czech Republic, Germany and the United Kingdom).

Nineteen countries reported having a compulsory notification system, whereas Belgium and the United Kingdom reported having a voluntary system. Greece, Latvia and Sweden did not specify the type of notification system they use.

Suggested citation: European Centre for Disease Prevention and Control. Chikungunya fever. In: ECDC. Annual epidemiological report for 2015. Stockholm: ECDC; 2018.

Stockholm, January 2018

Most countries have a comprehensive surveillance system. The Netherlands has a different type of system; Greece and Sweden did not provide information.

Disease surveillance for chikungunya is mostly passive except in the Czech Republic, Portugal, Slovakia and the United Kingdom, where active systems are in place. The type of system is not specified in Greece, Latvia and Sweden [2]. All countries report case-based data except Belgium.

Epidemiology

In 2015, 624 cases of chikungunya fever were reported, of which 478 were confirmed (76.6%). This represents a decrease of 57.3% compared with 2014 (Figure 1).

The notification rate in 2015 (0.13 cases per 100 000 population) was much lower than in 2014 (0.31 cases per 100 000 population) and higher than in previous years (0.01–0.02) (Table 1).

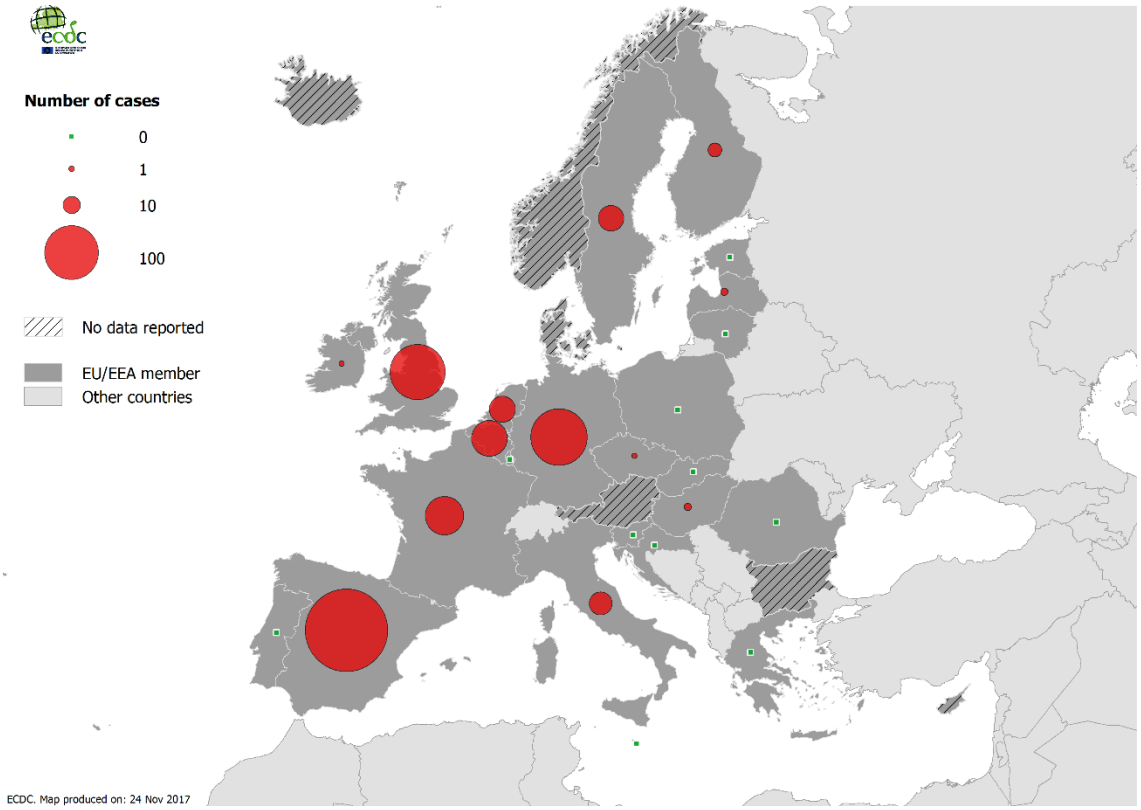
The highest number of cases was reported in Spain (n=234), followed by Germany (n=110), the United Kingdom (n=106) and France (n=52) (Figure 1).

Table 1. Distribution of confirmed cases of chikungunya fever, EU/EEA, 2011–2015

Country	2011		2012		2013		2014		2015				
	Reported cases		Reported cases		Reported cases		Reported cases		National coverage	Reported cases			Confirmed cases
	Number	Rate	Number	Rate	Number	Rate	Number	Rate		Number	Rate	ASR	
Austria	2	0.0	0	0.0	0	0.0	.	.	.	.	.	.	.
Belgium	8	0.1	6	0.1	7	0.1	74	0.7	Y	44	0.4	0.4	44
Bulgaria	.	.	.	.	.	.	.	.	.	.	.	.	.
Croatia	.	.	0	0.0	0	0.0	0	0.0	Y	0	0.0	0.0	0
Cyprus	.	.	.	.	.	.	.	.	.	.	.	.	.
Czech Republic	0	0.0	0	0.0	0	0.0	3	0.0	Y	1	0.0	0.0	1
Denmark	.	.	.	.	.	.	.	.	.	.	.	.	.
Estonia	0	0.0	0	0.0	0	0.0	0	0.0	Y	0	0.0	0.0	0
Finland	0	0.0	0	0.0	1	0.0	4	0.1	Y	7	0.1	0.1	7
France	12	0.0	6	0.0	11	0.0	550	0.8	Y	52	0.1	0.1	52
Germany	13	0.0	9	0.0	16	0.0	162	0.2	Y	110	0.1	0.1	110
Greece	0	0.0	0	0.0	0	0.0	1	0.0	Y	0	0.0	0.0	0
Hungary	0	0.0	0	0.0	0	0.0	2	0.0	Y	2	0.0	0.0	0
Ireland	0	0.0	0	0.0	0	0.0	1	0.0	Y	1	0.0	0.0	0
Italy	2	0.0	5	0.0	3	0.0	39	0.1	Y	18	0.0	0.0	18
Latvia	0	0.0	0	0.0	0	0.0	0	0.0	Y	2	0.1	0.1	2
Lithuania	0	0.0	0	0.0	0	0.0	0	0.0	Y	0	0.0	0.0	0
Luxembourg	0	0.0	0	0.0	0	0.0	0	0.0	Y	0	0.0	0.0	0
Malta	0	0.0	0	0.0	0	0.0	0	0.0	Y	0	0.0	0.0	0
Netherlands	.	.	.	.	.	.	33	-	N	24	-	-	0
Poland	0	0.0	0	0.0	0	0.0	0	0.0	Y	0	0.0	0.0	0
Portugal	.	.	.	.	.	.	.	.	Y	0	0.0	0.0	0
Romania	0	0.0	0	0.0	0	0.0	0	0.0	Y	0	0.0	0.0	0
Slovakia	0	0.0	0	0.0	0	0.0	0	0.0	Y	0	0.0	0.0	0
Slovenia	0	0.0	0	0.0	0	0.0	0	0.0	Y	0	0.0	0.0	0
Spain	4	-	2	-	2	-	272	0.6	Y	234	0.5	0.4	209
Sweden	0	0.0	2	0.0	6	0.1	19	0.2	Y	23	0.2	0.2	23
United Kingdom	14	0.0	21	0.0	26	0.0	301	0.5	Y	106	0.2	0.2	12
EU	55	0.0	51	0.0	72	0.0	1461	0.3	.	624	0.1	0.1	478
Iceland	.	.	.	.	.	.	.	.	.	.	.	.	.
Liechtenstein	.	.	.	.	.	.	.	.	.	.	.	.	.
Norway	.	.	.	.	.	.	.	.	.	.	.	.	.
EU/EEA	55	0.0	51	0.0	72	0.0	1461	0.3	.	624	0.1	0.1	478

Source: Country reports. Legend: Y = yes, N = no, C = case based, · = no report, ASR = age-standardised rate

Figure 1. Distribution of reported chikungunya cases by Member States, EU/EEA, 2015



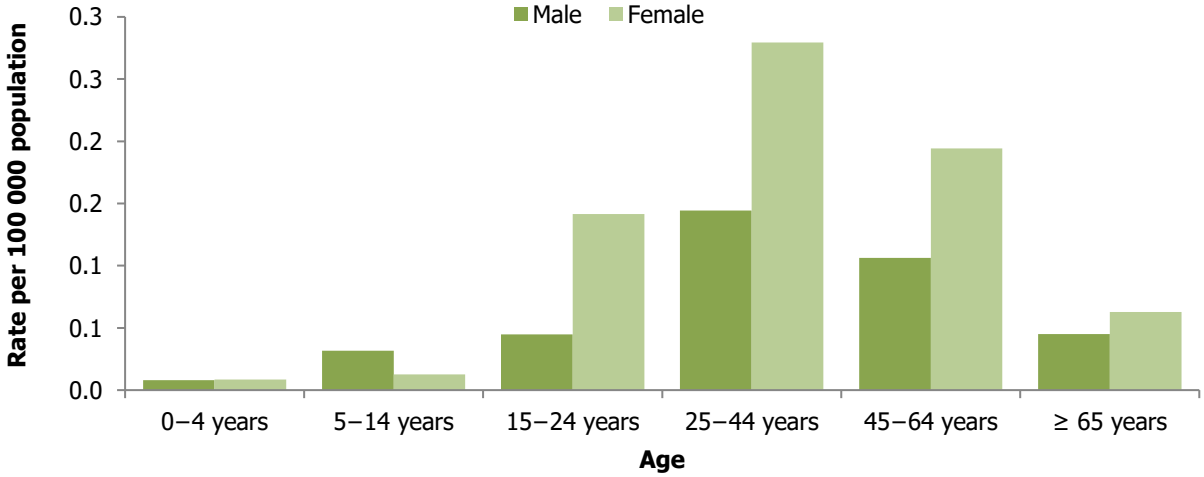
Source: Country reports from Belgium, Croatia, the Czech Republic, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, the United Kingdom.

Age and gender distribution

The age-specific rate of reported cases was the highest among the age groups 25–44 and 45–64 years (0.21 and 0.15 cases per 100 000 population, respectively).

Overall, 64.9% of cases were female, with a notification rate of 0.16 cases per 100 000 population, compared with 0.09 cases per 100 000 population in males. The male-to-female ratio was 0.5:1. The highest rates were reported in females of all age groups except for the age group 5–14 years (Figure 2). This age and gender pattern was similar in 2013 and 2014.

Figure 2. Distribution of rate of chikungunya cases per 100 000 population, by age and gender, EU/EEA, 2015

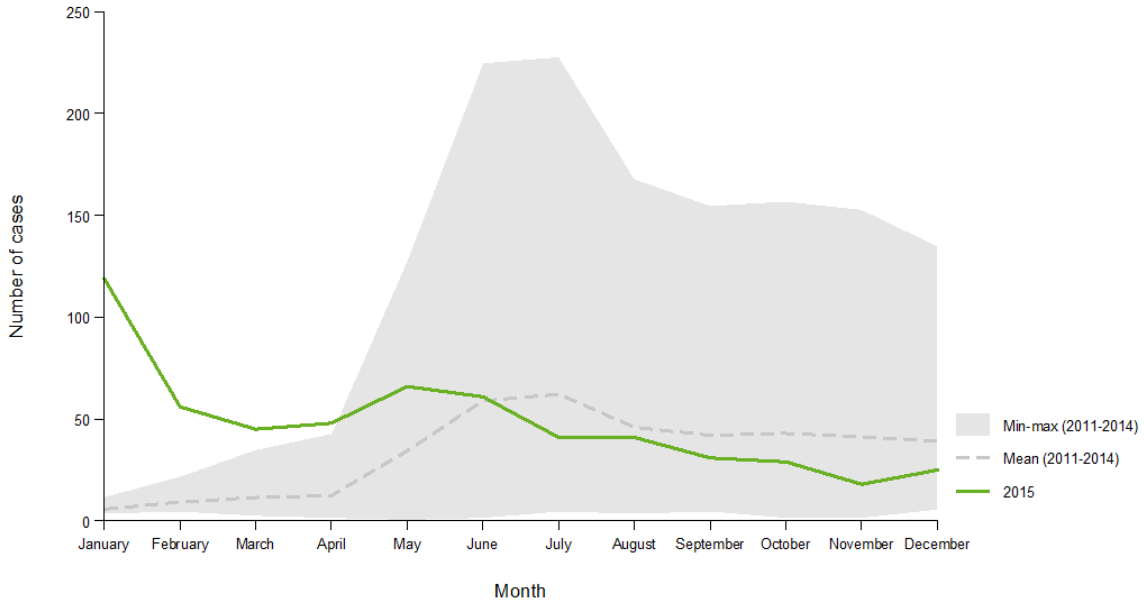


Source: Country reports from Belgium, Croatia, the Czech Republic, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, the United Kingdom.

Seasonality

Case numbers peaked in January, with 119 cases reported that month. A second, smaller peak was observed in May–June, followed by a slow decrease until the end of the year (Figure 3). During the first half of the year, the number of reported cases stayed relatively high due to ongoing outbreaks in the Americas (Figure 4).

Figure 3. Seasonal distribution of reported chikungunya cases, EU/EEA, 2015 compared with 2011–2015



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

Place of infection

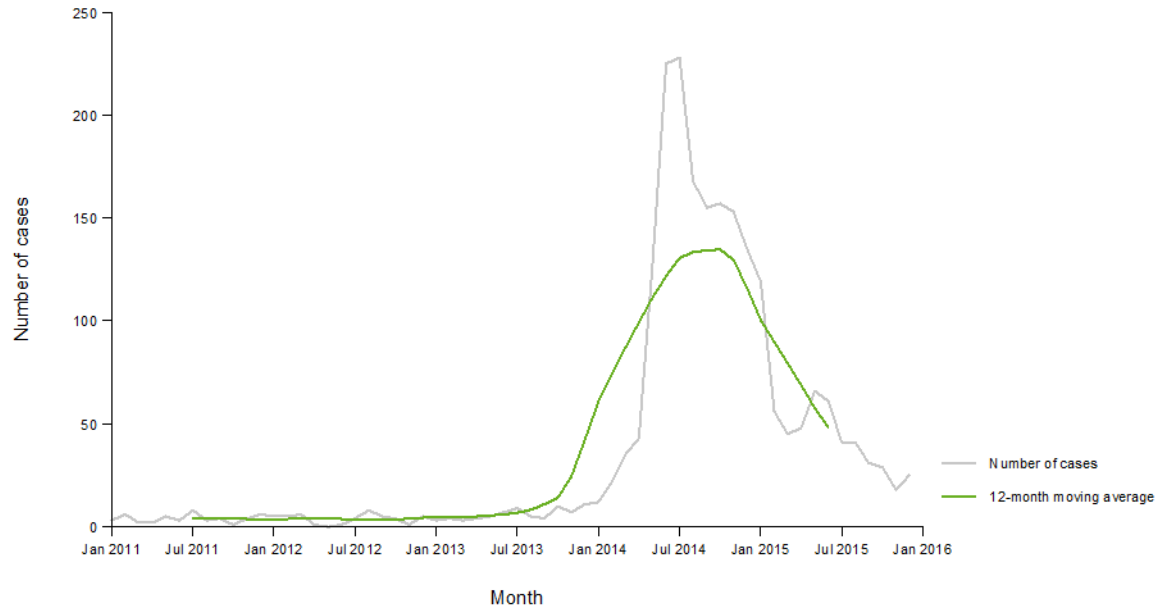
All 580 cases with known importation status were imported from outside the EU/EEA. For the 44 cases reported by Belgium in an aggregated format, importation status was not specified. For 371 cases a suspected country of infection was specified.

Most of the travel-related cases were returning from the Americas (n=312; 84.1%), with a majority of cases returning from South America (n=184; 59.0%), primarily from Colombia (89), Ecuador (58) and Bolivia (24). Outside the Americas, most cases were associated with travel to India (19) and French Polynesia (15).

Trend

After a peak in cases in 2014, the number of cases decreased in 2015 (Figure 4). Due to the varying number of reporting countries from reporting year to reporting year, a more precise analysis is not possible.

Figure 4. Trend and number of reported chikungunya cases, EU/EEA, 2011–2015



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

Discussion

The number of reported chikungunya cases in the EU/EEA decreased compared with 2014 but remained higher than in earlier years. As in 2014, most cases were imported from the Americas. In 2014, the majority of the cases (n=889; 82.9%) were imported from the Caribbean, reflecting a large outbreak in this region.

In the Americas, the first documented autochthonous transmission of chikungunya virus (Asian genotype) was confirmed in December 2013 in the Caribbean island of Saint Martin. The virus rapidly spread to the surrounding islands and reached South, Central and North America [4]. The Pan American Health Organization (PAHO) registered 1 144 205 cases in the Americas between December 2013 and December 2014 (incidence rate 118.7 cases per 100 000 population) and 730 969 cases in 2015 (incidence rate 73.8 cases per 100 000 population) [5,6]. In 2015, outbreaks were also reported in the Pacific region [7].

In Europe, the first identified outbreak of chikungunya fever was reported in 2007 in north-east Italy [8]. In 2010 and 2014, autochthonous transmission was reported in the south of France with two and eleven cases, respectively [9,10]. These recurrent events highlight the risk of local transmission of dengue virus in countries or regions where the competent mosquito vectors *Aedes albopictus* and/or *Aedes aegypti* are established and where conditions are suitable for transmission, e.g. in many Mediterranean countries of the EU and in the EU outermost regions, for example Madeira [11].

Public health implications

Vigilance regarding imported cases of chikungunya and other diseases transmitted by *Aedes* mosquitoes remains essential. Awareness should be raised among clinicians and travel clinic specialists in the EU, especially in areas where competent mosquito vectors are present and environmental conditions are suitable for transmission [8].

Preparedness plans to contain and/or mitigate the spread of chikungunya in the EU should address the following aspects:

- Strengthening of surveillance systems, including the adoption of a specific case definition and the rapid detection and notification of cases at local, national and international levels
- Regular reviews of contingency plans for mosquito-borne outbreaks
- Education and engagement of the general public in the control of mosquito breeding sites
- Strengthening vector surveillance systems and rapid implementation of vector control measures around each case
- Considering the adoption of blood safety measures in affected areas; measures should be aligned with the ones for West Nile virus infection.

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