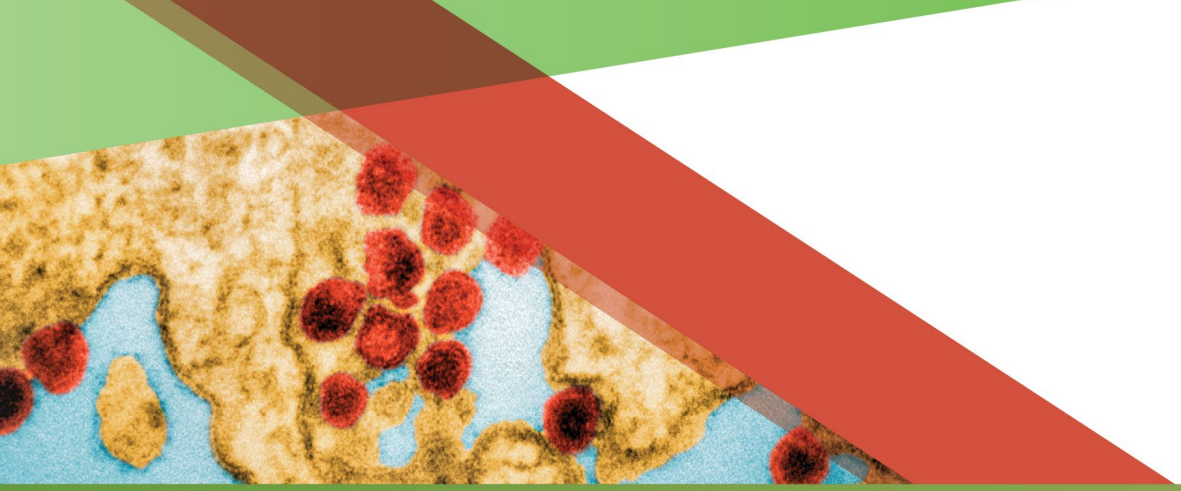

SURVEILLANCE REPORT

Chikungunya virus disease

Annual Epidemiological Report for 2020

Key facts

- For 2020, 24 EU/EEA countries reported 59 cases of chikungunya virus disease, of which 52 (88%) were confirmed. This was the lowest number of cases reported at the EU/EEA level since 2016.
- The EU/EEA notification rate was <0.1 cases per 100 000 population.
- The majority (n = 49; 83%) of cases were among those aged 25–64 years.
- The majority of cases were likely infected in either Thailand (n = 12; 24%) or Brazil (n = 11; 22%).
- No autochthonous transmission of chikungunya virus occurred within the EU/EEA[1].

Introduction

Chikungunya virus disease is a mosquito-borne disease caused by a virus of the *Togaviridae* family. The disease is widespread in tropical and subtropical regions. It usually results in high fever, myalgia, skin rash and marked arthralgia. Chronic arthralgia may persist for weeks or months, causing significant disease burden in the affected communities.

Methods

This report is based on data for 2020 retrieved from The European Surveillance System (TESSy) on 25 October 2021. TESSy is a system for the collection, analysis and dissemination of data on communicable diseases.

For a detailed description of the 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 2020, 24 EU/EEA countries reported data on chikungunya virus disease. No data were reported by Bulgaria, Cyprus, Denmark, Iceland, Liechtenstein or Norway. In addition, as the United Kingdom (UK) left the EU on 31 January 2020, the country was not included in the data call and consequently did not provide data. All countries reported case-based data except for Belgium, which reported aggregated data. Seventeen countries reported no cases.

[1] For the purposes of this document, the EU/EEA excludes the Outermost Regions.

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Stockholm, April 2022

Eight countries (Belgium, Greece, Italy, Lithuania, Malta, Poland, Romania, Spain) referred to the 2018 chikungunya virus disease case definition, 12 countries referred to the EU generic case definition for viral haemorrhagic fevers, three countries used other case definitions (Czechia, Germany, Sweden) and one country did not specify which case definition was used (France).

All reporting countries except for the Netherlands had a comprehensive surveillance system. Reporting was compulsory in all countries, except for Sweden, where it was voluntary.

Epidemiology

For 2020, 24 countries reported 59 cases of chikungunya virus disease, of which 52 (88%) were confirmed. This was the lowest number of cases reported at the EU/EEA level since 2016. However, the UK, which was among the top three countries with the highest number of cases reported from 2016 to 2019, was not included in the data collection in 2020 due to no longer being an EU Member State.

From 2016 to 2020, the number of reported cases (excluding those from the UK) ranged from 111 in 2018 to 442 in 2017, with no discernible trend (Figure 2). An 86% decrease in number of cases was observed in 2020 compared with 2019 (excluding UK data).

In 2020, Germany reported the highest proportion of cases (44%), followed by France (22%) (Table 1, Figure 1).

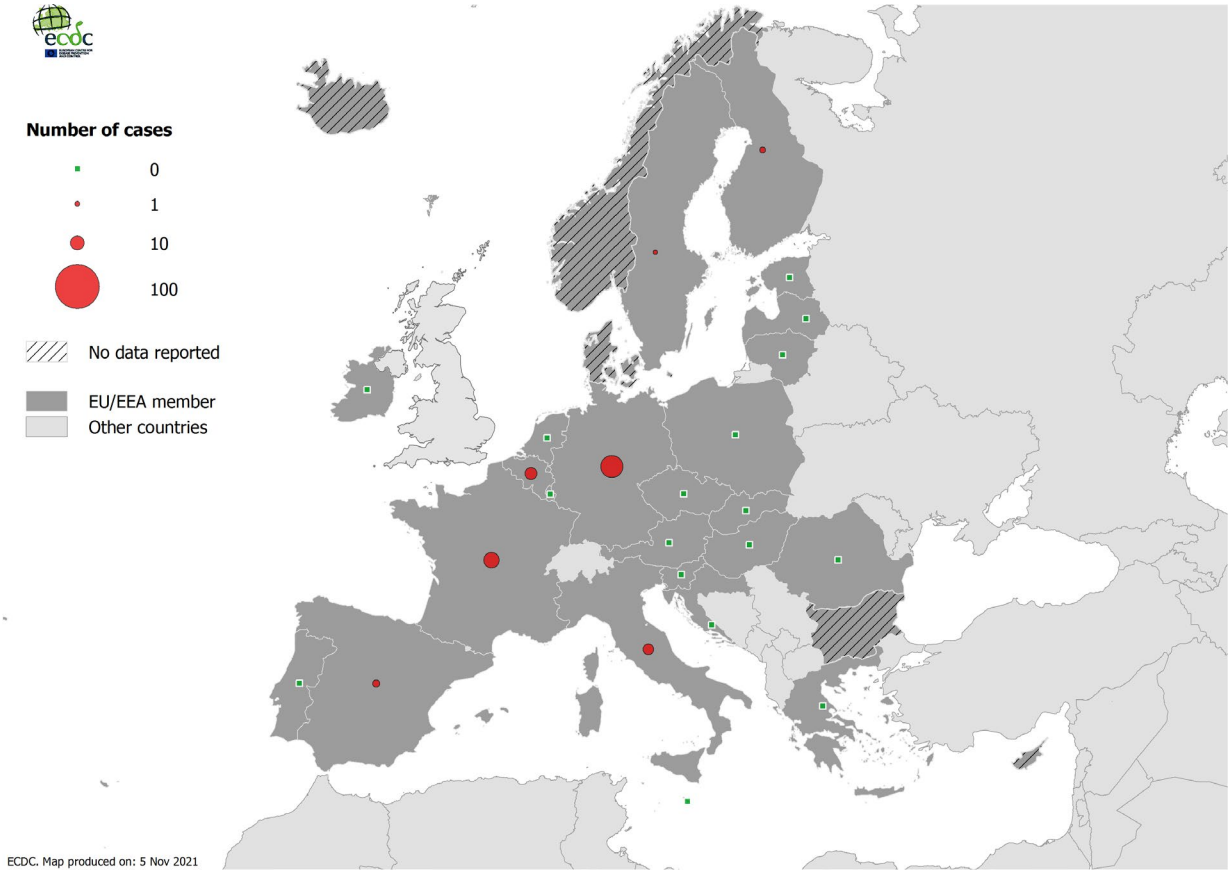
The EU/EEA notification rate in 2020 was <0.1 cases per 100 000 population.

Table 1. Number of chikungunya virus disease cases and rates per 100 000 population by country and year, EU/EEA, 2016–2020

Country	2016		2017		2018		2019		2020		
	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate	ASR
Austria	9	0.1	5	0.1	1	0.0	17	0.2	0	0.0	0.0
Belgium	29	0.3	10	0.1	3	0.0	60	0.5	8	0.1	0.1
Bulgaria	ND	NR	ND	NR	ND	NR	ND	NR	ND	NR	NR
Croatia	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0.0
Cyprus	ND	NR	ND	NR	ND	NR	ND	NR	ND	NR	NR
Czechia	7	0.1	0	0.0	6	0.1	15	0.1	0	0.0	0.0
Denmark	ND	NR	ND	NR	ND	NR	ND	NR	ND	NR	NR
Estonia	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0.0
Finland	0	0.0	5	0.1	1	0.0	14	0.3	2	0.0	0.0
France	42	0.1	35	0.1	16	0.0	108	0.2	13	0.0	0.0
Germany	74	0.1	33	0.0	26	0.0	88	0.1	26	0.0	0.0
Greece	2	0.0	0	0.0	1	0.0	2	0.0	0	0.0	0.0
Hungary	1	0.0	1	0.0	3	0.0	5	0.1	0	0.0	0.0
Iceland	ND	NR	ND	NR	ND	NR	ND	NR	ND	NR	NR
Ireland	0	0.0	0	0.0	0	0.0	1	0.0	0	0.0	0.0
Italy	17	0.0	289	0.5	4	0.0	25	0.0	6	0.0	0.0
Latvia	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0.0
Liechtenstein	ND	NR	ND	NR	ND	NR	ND	NR	ND	NR	NR
Lithuania	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
Malta	1	0.2	0	0.0	0	0.0	0	0.0	0	0.0	0.0
Netherlands	7	NR	0	NR	0	NR	0	NR	0	NR	NR
Norway	ND	NR	ND	NR	ND	NR	ND	NR	ND	NR	NR
Poland	0	0.0	0	0.0	0	0.0	2	0.0	0	0.0	0.0
Portugal	3	0.0	0	0.0	1	0.0	0	0.0	0	0.0	0.0
Romania	0	0.0	0	0.0	2	0.0	0	0.0	0	0.0	0.0
Slovakia	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0.0
Slovenia	2	0.1	0	0.0	0	0.0	0	0.0	0	0.0	0.0
Spain	105	0.2	51	0.1	27	0.1	26	0.1	3	0.0	0.0
Sweden	20	0.2	13	0.1	20	0.2	58	0.6	1	0.0	0.0
UK	169	0.3	104	0.2	59	0.1	94	0.1	ND	NR	NR
EU/EEA	**488**	**0.1**	**546**	**0.1**	**170**	**0.0**	**516**	**0.1**	**59**	**0.0**	**0.0**

Source: Country reports
ASR: age-standardised rate
ND: no data reported
NR: no rate calculated
Data were not collected from the UK in 2020, as the country left the EU on 31 January 2020. Although number of cases was provided, rates were not calculated for the Netherlands because the country does not have a comprehensive surveillance system.

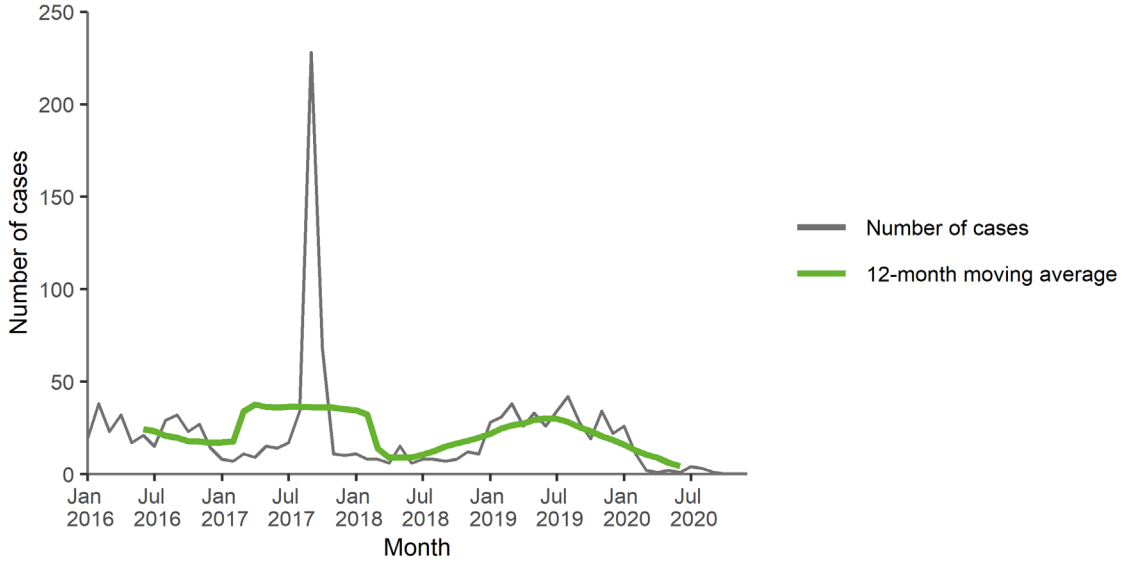
Figure 1. Distribution of chikungunya virus disease cases by country, EU/EEA, 2020



Source: Country reports from Austria, Belgium, Croatia, Czechia, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Poland, Portugal, Romania, Slovakia, Slovenia, Spain and Sweden

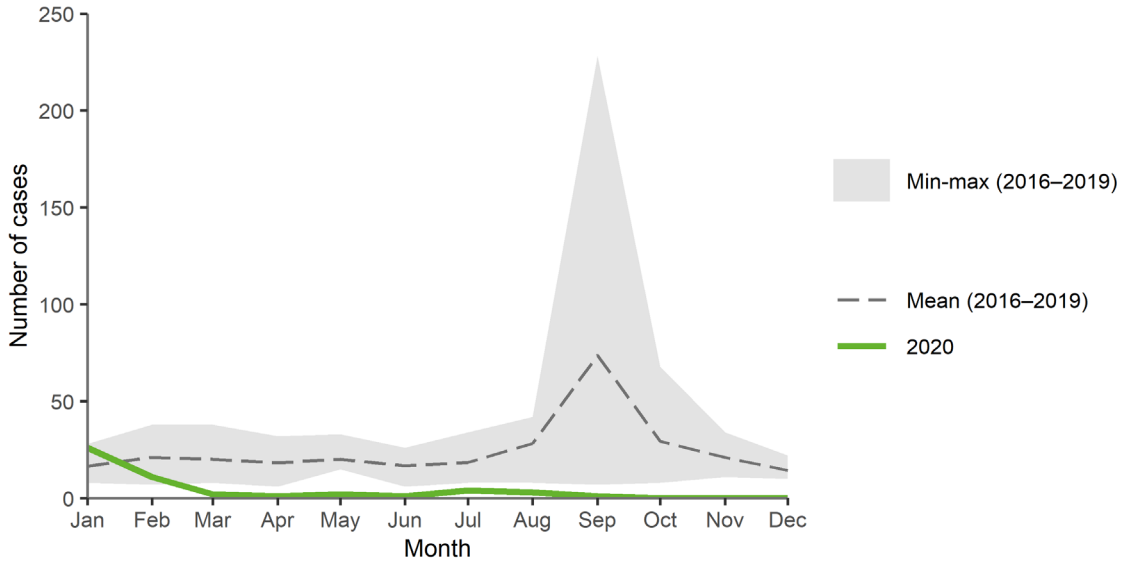
Information about the month of onset, diagnosis and/or reporting was available for 51 cases. 73% of the cases were reported in January and February (Figures 2, 3). When compared with previous years, the monthly numbers of cases reported from March to December were below the expected range.

Figure 2. Distribution of chikungunya virus disease cases by month, EU/EEA, 2016–2020



Source: Country reports from Austria, Croatia, Czechia, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Malta, the Netherlands, Poland, Portugal, Romania, Slovakia, Slovenia, Spain and Sweden

Figure 3. Distribution of chikungunya virus disease cases by month, EU/EEA, 2020 and 2016–2019



Source: Country reports from Austria, Croatia, Czechia, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Malta, the Netherlands, Poland, Portugal, Romania, Slovakia, Slovenia, Spain and Sweden

Information on sex and age was available for all 59 cases. The male-to-female ratio was 0.9:1. The majority (n = 49; 83%) of cases were aged 25–64 years. The highest rates were observed in the age groups 25–44 years and 44–64 years, with 0.02 cases per 100 000 population for both age groups.

All cases were either imported or with unknown importation status. Information on the probable country of infection was available for 44 travel-related cases, who acquired their infection in 10 different probable countries of infection. The majority of these cases were likely infected in either Thailand (n = 12; 24%) or Brazil (n = 11; 22%).

Discussion

The decrease in the number of travel-related cases of chikungunya virus disease in the EU/EEA in 2020 can largely be explained by the decrease in travel that occurred due to the restrictions implemented during the COVID-19 pandemic. This may be supported by the fact that, in 2020, the number of chikungunya virus disease cases reported globally generally decreased compared to previous years [4-7]. Overall, 2020 data should be interpreted with caution, as it is unclear how the COVID-19 pandemic influenced diagnostic capacity and surveillance in EU/EEA countries and globally.

As the UK left the EU on 31 January 2020, the country did not report any 2020 data through TESSy. Considering that the UK was among the countries reporting the highest numbers of cases in previous years, the total number of cases reported in the EU/EEA compared with related rates of infection should be interpreted with caution.

The age and sex distribution of chikungunya virus disease cases reported in the EU/EEA most likely reflects the demographic characteristics of travellers rather than other risk factors.

The peak in the number of cases observed from January to February and the decrease in the number of cases observed in the spring were expected, as travel restrictions were established from March onwards in many countries.

No autochthonous transmission of chikungunya virus was reported within the EU/EEA in 2020. The most recent outbreaks were in 2017 in France (n = 17 cases) and in Italy (n = 489 cases) [8]. Vector-borne transmission events of chikungunya virus within the EU/EEA are expected in areas where *Aedes albopictus* is established and when environmental conditions allow sufficient vector capacity (roughly from early summer to mid-autumn) [9].

Public health implications

Vigilance regarding travel-related cases of chikungunya and other *Aedes*-borne infections remains essential. Public health authorities in the EU/EEA should consider raising awareness among clinicians and travel clinic specialists about the risk related to such diseases, especially when and where vector-borne secondary transmission may take place. The detection of an autochthonous case in the EU/EEA should trigger epidemiological and entomological investigations to assess the size of the transmission area and the potential for onward transmission, as well as to guide vector control measures.

To date, *Aedes albopictus* is the main competent vector for chikungunya virus in mainland EU/EEA and is largely established throughout the region. *Aedes aegypti*, the primary vector for chikungunya virus transmission globally, is not established in the EU/EEA, but the species is established around the Black Sea and in several EU Overseas Countries and Territories (e.g. Anguilla, Aruba, French Polynesia) and Outermost regions (e.g. Madeira, Martinique, La Réunion). The introduction and subsequent establishment of *Aedes aegypti* in mainland EU/EEA would certainly increase the likelihood of autochthonous transmission events within the region, as well as the size of the epidemics.

Transmission of chikungunya virus through transfusion and transplantation of substances of human origin has not been documented. Based on knowledge from other vector-borne diseases, preventive safety measures are anyway applied to substances of human origin from donors residing in or returning from a chikungunya-affected area [10].

There is no licenced vaccine against chikungunya virus disease; prevention is based on protection against mosquito bites.

Personal protective measures focus principally on protection against mosquito bites. *Aedes* mosquitoes have diurnal biting activities in both indoor and outdoor environments. Personal protective measures should therefore be applied all day long and especially during the hours of highest mosquito activity (mid-morning and late afternoon to twilight). Personal protective measures to reduce the risk of mosquito bites include: using mosquito bed nets (preferably insecticide-treated nets), sleeping or resting in screened or air-conditioned rooms, wearing clothes that cover most of the body, and using mosquito repellent in accordance with the instructions indicated on the product label.

Travellers that visit chikungunya-endemic areas and reside in receptive areas of mainland EU/EEA should continue to apply personal protective measures after their return for a period of about two weeks. This is to avoid infecting local mosquitoes, which could result in autochthonous transmission within mainland EU/EEA. In addition, local authorities may consider conducting preventive vector control measures around imported chikungunya cases in receptive areas.

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