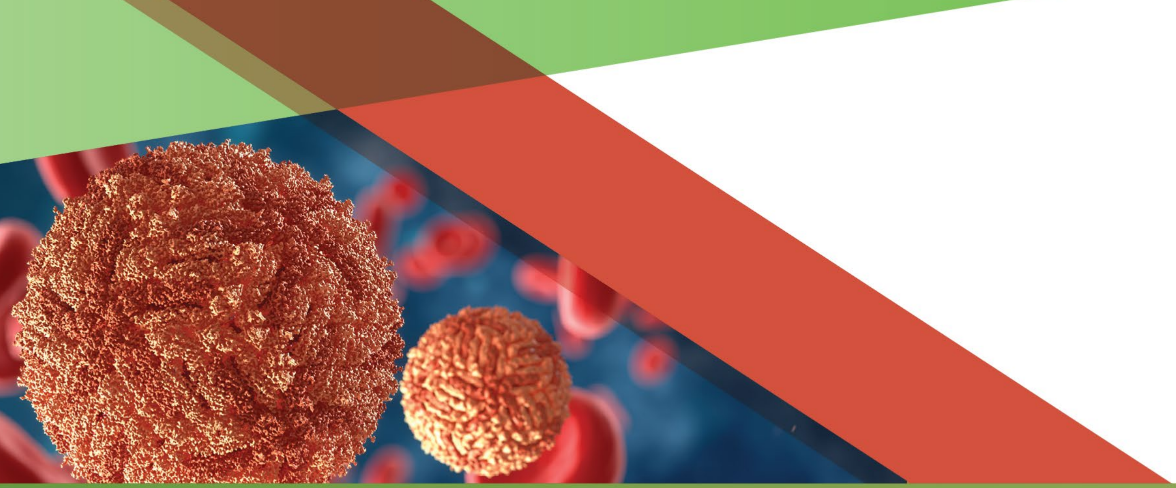


SURVEILLANCE REPORT

Zika

Annual Epidemiological Report for 2018

Key facts

In 2018, in the EU/EEA countries:

- 51 cases of Zika virus (ZIKV) infection were reported;
- no autochthonous vector-borne cases of ZIKV infection were reported;
- 56.8% percent of ZIKV infection in EU/EEA travellers originated from the Caribbean, 22.3% from South-East Asia, and 11.3% from the Americas;
- there were no reports of cases involving sexual or vertical transmission of ZIKV.

Methods

This report is based on data for 2018 retrieved from The European Surveillance System (TESSy) on 10 September 2019 [1]. TESSy is a system for the collection, analysis and dissemination of data on communicable diseases.

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-six EU/EEA countries reported data on Zika virus disease in 2018, according to the interim case definition from March 2016, or according to the adopted EU case definitions for Zika virus disease and congenital Zika virus disease, which entered into force in June 2018 [4-6]. Countries reported only confirmed cases in TESSy.

Information on the surveillance system type was provided by 26 countries and all reported having comprehensive surveillance systems. Reporting is compulsory in 20 countries, voluntary in three (Luxembourg, Slovenia and Sweden) and reported as 'other' in the United Kingdom [2]. Data reporting is case-based in all countries.

Epidemiology

In 2018, ten countries reported 51 cases, while 16 countries reported no cases. No data were reported by Bulgaria, Cyprus, Iceland, Liechtenstein and Poland. The largest number of cases were reported by Germany (n=18, 35%), France (n=10, 19.6%) and Spain (n=9, 17.6%; Table 1, Figure 1).

Suggested citation: European Centre for Disease Prevention and Control. Zika. In: ECDC. Annual epidemiological report for 2018. Stockholm: ECDC; 2019.

Stockholm, December 2019

Table 1. Distribution of Zika virus infection cases by country, EU/EEA, 2015–2018

	2015	2016	2017	2018
Country	Reported cases	Reported cases	Reported cases	Reported cases
Austria	1	41	8	0
Belgium	1	120	42	2
Bulgaria	.	.	.	.
Croatia	.	.	0	0
Cyprus	.	.	.	.
Czech Republic	.	13	4	2
Denmark	.	8	6	0
Estonia	.	0	0	0
Finland	1	6	2	0
France	.	1141	28	10
Germany	.	.	69	18
Greece	.	2	1	2
Hungary	.	2	0	1
Iceland	.	.	.	.
Ireland	1	15	4	0
Italy	.	101	25	2
Latvia	0	0	0	0
Liechtenstein	.	.	.	.
Lithuania	.	.	0	0
Luxembourg	.	2	1	0
Malta	.	2	0	0
Netherlands	11	98	6	3
Norway	.	8	4	0
Poland	.	.	.	.
Portugal	.	18	1	0
Romania	.	3	0	0
Slovakia	.	3	0	0
Slovenia	.	7	0	0
Spain	10	301	44	9
Sweden	1	34	16	0
United Kingdom	3	194	14	2
EU/EEA	**29**	**2119**	**275**	**51**

Source: country reports.
'.': no data reported.

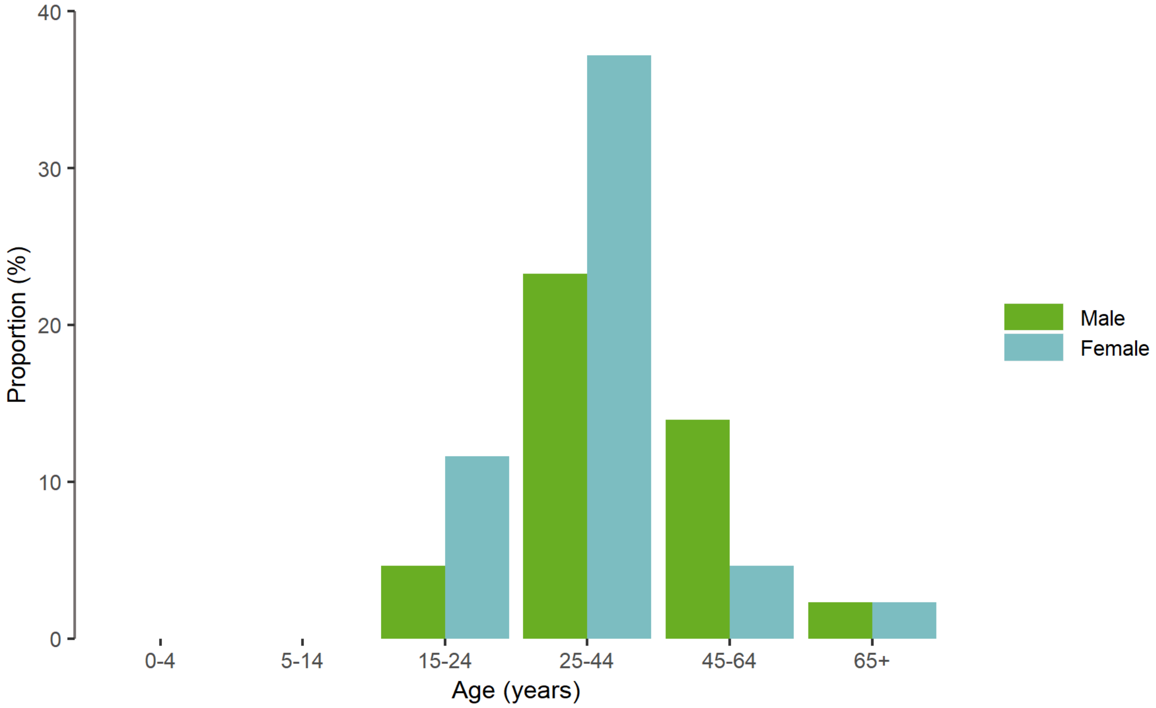
Figure 1. Distribution of Zika virus infection cases by country, EU/EEA, 2018

Among cases where gender was reported (n=50), the majority were female (n=30, 60%) with a male-to-female ratio of 0.7:1. Cases were most frequently reported among those aged 25–44 years (n=29, 58%) followed by 45–64-year-olds (n=11, 22%). The mean age was 37.3 years and the median age was 33 years for males and 32 years for females. There was a higher proportion of females than males in 5–14 year-olds and 25–44-year-olds (Figure 2).

Pregnancy status was known for 12 female cases (40%), four of whom (33.3%) were reported to be pregnant. One pregnancy was terminated, while the outcome for the others is unknown.

In 2018, all 51 ZIKV infection cases reported in the EU/EEA countries were imported. The mode of transmission was known for 51% (n=26) of cases. All were returning travellers thought to have been infected through mosquito bites. The place of infection was known for 44 (86.3%) cases and most acquired the infection in the Caribbean (56.8%), the majority in Cuba (52.3%), followed by South-East Asia (22.3%) and Central and South America (11.3%). There was no autochthonous vector-borne transmission of ZIKV reported in the EU/EEA during 2018.

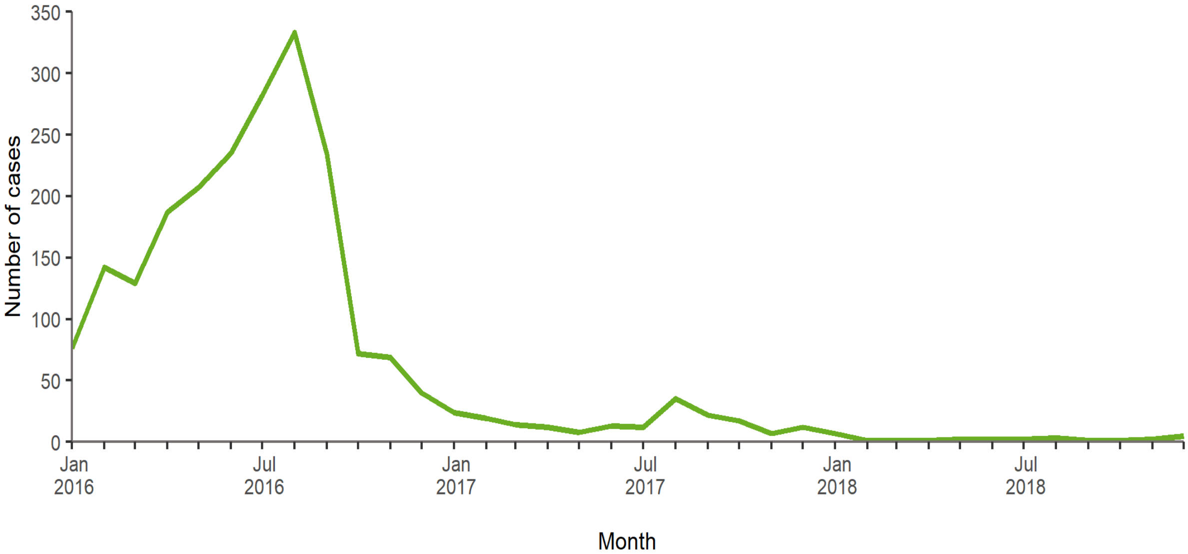
Figure 2. Distribution of Zika virus infection cases, by age and gender, EU/EEA, 2018



Trend

In 2018, the number of reported Zika virus disease cases in the EU/EEA countries decreased further compared to 2017 and 2016. A small peak in reporting was noted in January 2018, coinciding with the return of travellers from end-of-year holidays in the Caribbean and South-East Asia.

Figure 3. Distribution of Zika virus disease cases by month, EU/EEA, 2016–2018



Source: Country reports from Austria, Belgium, Denmark, Estonia, Finland, France, Greece, Ireland, Italy, Latvia, Malta, Norway, Portugal, Romania, Slovenia, Slovakia, Spain, Sweden and the United Kingdom.

Discussion

Zika virus was first recognised in Uganda in 1947 and sero-epidemiological evidence suggests widespread distribution in Africa [7]. The virus emerged in 2007 in Micronesia, followed by outbreaks in other countries and territories in the Pacific (2013–2014). In 2015, it caused an epidemic of unprecedented magnitude in the Americas, leading to the recognition of the teratogenic effects of ZIKV to the developing foetal brain [8,9].

The large ZIKV outbreak in South America in 2016 led to increased concern in Europe about the introduction of the virus and potential local transmission in areas where *Aedes albopictus* and *Ae. aegypti* are present. In March 2016, surveillance of Zika virus disease started with the main objectives of early detection of locally acquired cases in the EU/EEA and timely reporting of travel-associated cases, particularly those residing in areas in the EU/EEA where *Ae. albopictus* or *Ae. aegypti* are established (receptive areas), to trigger appropriate control measures [6].

After 2016, the number of imported Zika virus disease cases in EU/EEA countries decreased rapidly (Figure 3), most probably reflecting the low levels of transmission in the countries visited by European travellers. The largest proportion of imported cases in European residents in 2018 originated in the Caribbean, in particular from Cuba, indicating ongoing established transmission in the area since 2016 [10].

No autochthonous vector-borne transmission in the EU/EEA was reported in 2018 [6]. Investigators have established that *Ae. albopictus* in Europe are competent vectors of ZIKV but, given the variations of local populations and the short window for transmission during the summer months in the northern hemisphere, the capability for a sustained transmission remains limited [11-13].

Public health implications

The impact of Zika virus in Europe has been limited to returning travellers and a few sporadic locally-acquired cases due to sexual transmission.

WHO advises against any restriction of travel to, or trade with, countries, areas and territories with Zika virus transmission. WHO recommends that pregnant women avoid travel to areas with Zika virus transmission, particularly during outbreaks, based on the increased risk of microcephaly and other severe congenital malformations. All residents of, and travellers to areas with ongoing or historical transmission of ZIKV should prevent mosquito bites, and be able to make informed decisions on whether to abstain from sex, practice safer sex, or avoid/delay pregnancy. Pregnant women and their partners, and anyone planning pregnancy should be provided with comprehensive information about the risk associated with ZIKV infection, especially before travelling. Ideally, this information should also address other infectious agents that can have a significant impact on pregnancy and cause foetal development disorders, such as the so-called TORCH agents (e.g. *Toxoplasma gondii* rubella virus, cytomegalovirus, herpes simplex virus and other pathogens) that are distributed worldwide [14,15].

Despite the evidence of limited competence of European *Ae. albopictus* populations in transmitting Zika virus infection, continued surveillance, which also focuses on returning travellers, is warranted to allow for the early detection of risk areas and outbreaks, as well as an efficient public health response.

References

1. European Centre for Disease Prevention and Control (ECDC). Introduction to the Annual Epidemiological Report 2019 [cited 11 June 2019]. Available from: https://www.ecdc.europa.eu/en/annual-epidemiological-reports/methods
2. European Centre for Disease Prevention and Control (ECDC). Surveillance systems overview Stockholm ECDC; 2019 [cited 11 June 2019]. Available from: https://www.ecdc.europa.eu/en/publications-data/surveillance-systems-overview-2018
3. European Centre for Disease Prevention and Control (ECDC). Surveillance atlas of infectious diseases Stockholm 2018. Available from: https://atlas.ecdc.europa.eu/public/index.aspx?Dataset=27&HealthTopic=56
4. European Centre for Disease Prevention and Control (ECDC). Interim case definition for surveillance of Zika virus infection. Stockholm: ECDC. Stockholm2016 [cited 19 June 2018]. Available from: https://www.ecdc.europa.eu/en/zika-virus-infection/surveillance-and-disease-data/case-definition
5. European Centre for Disease Prevention and Control. EU case definitions [cited 23 May 2019]. Available from: https://www.ecdc.europa.eu/en/surveillance-and-disease-data/eu-case-definitions
6. Spiteri G, Sudre B, Septfons A, Beaute J, The European Zika Surveillance Network. Surveillance of Zika virus infection in the EU/EEA, June 2015 to January 2017. Euro Surveill. 2017 Oct;22(41).
7. Yun S-I, Lee Y-M. Zika virus: An emerging flavivirus. Journal of Microbiology. 2017;55(3):204 - 19.
8. Musso D, Gubler DJ. Zika Virus. Clin Microbiol Rev. 2016 Jul;29(3):487-524.
9. de Araujo TVB, Ximenes RAA, Miranda-Filho DB, Souza WV, Montarroyos UR, de Melo APL, et al. Association between microcephaly, Zika virus infection, and other risk factors in Brazil: final report of a case-control study. Lancet Infect Dis. 2018 Mar;18(3):328-36.
10. Grubaugh ND, Saraf S, Gangavarapu K, Watts A, Tan AL, Oidtman RJ, et al. Travel Surveillance and Genomics Uncover a Hidden Zika Outbreak during the Waning Epidemic. Cell. 2019;178(5):1057-71.
11. Jupille H, Seixas G, Mousson L, Sousa CA, Failloux AB. Zika Virus, a New Threat for Europe? PLoS Negl Trop Dis. 2016 Aug;10(8):e0004901.
12. Di Luca M, Severini F, Toma L, Boccolini D, Romi R, Remoli ME, et al. Experimental studies of susceptibility of Italian Aedes albopictus to Zika virus. Euro Surveill. 2016 May 5;21(18).
13. Ryckebusch F, Berthet M, Misse D, Choumet V. Infection of a French Population of Aedes albopictus and of Aedes aegypti (Paea Strain) with Zika Virus Reveals Low Transmission Rates to These Vectors' Saliva. Int J Mol Sci. 2017 Nov 10;18(11).
14. World Health Organization. WHO guidelines for the prevention of sexual transmission of Zika virus: executive summary 2019 [cited 23 May 2019]. Available from: https://apps.who.int/iris/bitstream/handle/10665/311026/WHO-RHR-19.4-eng.pdf?ua=1
15. European Centre for Disease Prevention and Control. Rapid Risk Assessement-Zika virus transmission worldwide 2019 [cited 24 May 2019]. Available from: https://ecdc.europa.eu/en/publications-data/zika-virus-transmission-worldwide.