

SURVEILLANCE REPORT

Zika virus disease

Annual Epidemiological Report for 2022

Key facts

- For 2022, eight EU/EEA countries reported 34 cases of Zika virus disease.
- All cases were associated with travel outside the EU/EEA.

Introduction

Zika virus (ZIKV) disease is a mosquito-borne disease caused by *Orthoflavivirus zikaense*. The disease is most frequently an acute febrile illness with myalgia, skin rash, arthralgia, and neurological signs. Sub-clinical and asymptomatic cases are common. ZIKV was first recognised in Uganda in 1947 and sero-epidemiological evidence suggests wide distribution in Africa [1]. The virus emerged in 2007 in Micronesia, followed by outbreaks in other countries and territories across 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 [2,3].

Methods

This report is based on data for 2022 retrieved from The European Surveillance System (TESSy) on 20 December 2023. 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 'Introduction to the Annual Epidemiological Report' [4].

An overview of the national surveillance systems is available online [5].

A subset of the data used for this report is available through ECDC's online 'Surveillance atlas of infectious diseases' [6].

Twenty-seven EU/EEA countries reported data on ZIKV disease for 2022 (Bulgaria, Denmark, and Poland did not report any data). Sixteen countries used the EU case definition, nine used an alternative case definition, and two countries did not specify. Reporting was compulsory in most countries, voluntary in Slovenia and Sweden. Croatia and Malta did not specify this detail. In Belgium, reporting is only compulsory for infections acquired within Europe [7]. Surveillance was mostly comprehensive and passive in the reporting countries.

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Epidemiology

For 2022, eight EU/EEA countries reported 34 cases of ZIKV disease, 20 (59%) of which were confirmed, while 19 countries reported no cases. The cases were reported by Spain (n=13), Germany (n=10), France (n=6), Austria (n= 1), Czechia (n= 1), Italy (n= 1), Lithuania (n= 1), and Portugal (n= 1) (Table 1, Figure 1). Bulgaria, Denmark and Poland did not report.

Table 1. Zika virus disease cases by country and year, EU/EEA, 2018–2022

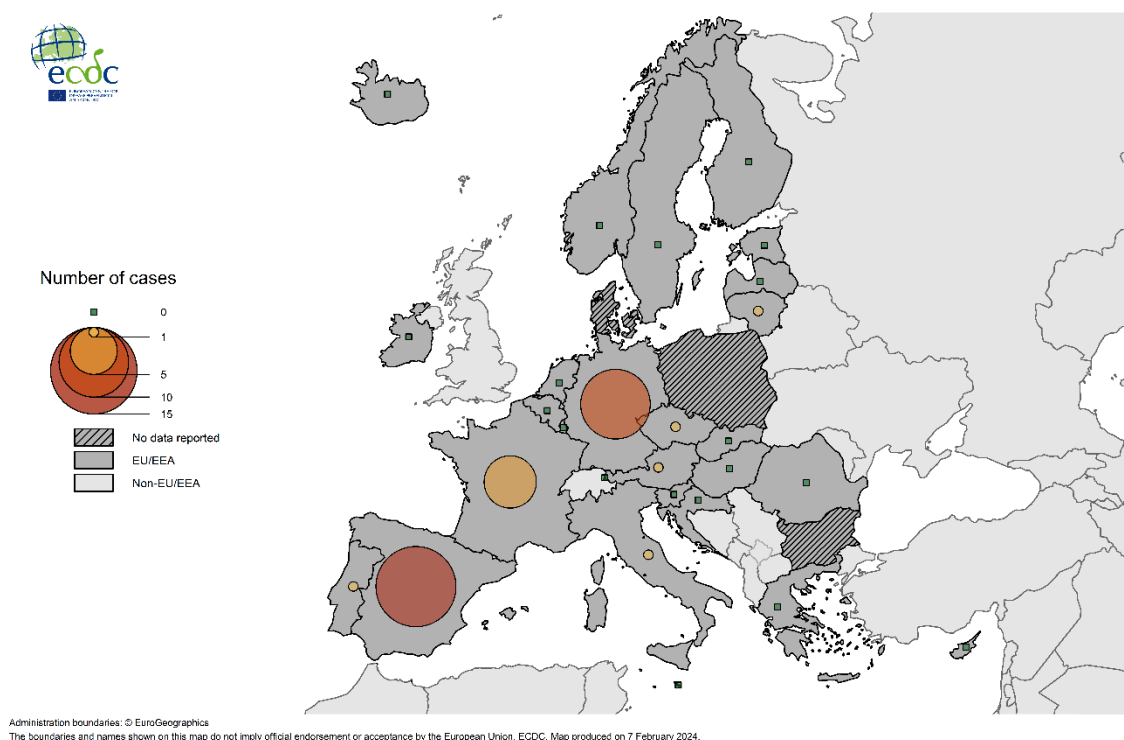
Country	2018	2019	2020	2021	2022
Austria	0	0	1	0	1
Belgium	2	1	0	0	0
Bulgaria	NDR	NDR	NDR	NDR	NDR
Croatia	0	0	0	0	0
Cyprus	NDR	NDR	NDR	0	0
Czechia	2	1	1	0	1
Denmark	0	2	NDR	NDR	NDR
Estonia	0	0	0	0	0
Finland	0	2	1	0	0
France	10	16	3	0	6
Germany	18	11	6	2	10
Greece	2	0	0	0	0
Hungary	1	1	0	0	0
Iceland	NDR	NDR	NDR	NDR	0
Ireland	0	0	2	0	0
Italy	2	4	4	0	1
Latvia	0	0	0	0	0
Liechtenstein	NDR	NDR	NDR	0	0
Lithuania	0	0	0	0	1
Luxembourg	0	0	0	1	0
Malta	0	1	0	0	0
Netherlands	3	0	0	0	0
Norway	0	2	0	0	0
Poland	NDR	NDR	NDR	NDR	NDR
Portugal	0	0	1	0	1
Romania	0	0	0	0	0
Slovakia	0	0	0	0	0
Slovenia	0	0	0	0	0
Spain	9	23	0	4	13
Sweden	0	0	3	0	0
EU/EEA (30 countries)	49	64	22	7	34
United Kingdom	0	0	NDR	NA	NA
EU/EEA (31 countries)	49	64	22	NA	NA

Source: Country reports.

NDR: No data reported.

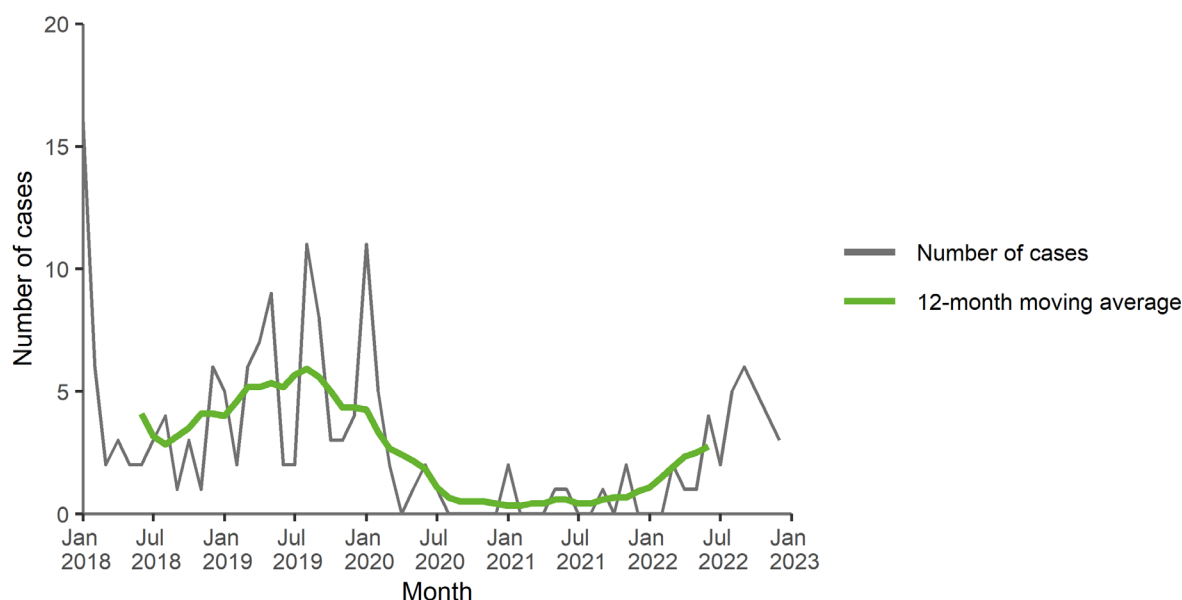
NA: Not applicable.

From 2020 onwards no data were reported by the United Kingdom, due to its withdrawal from the EU on 31 January 2020.

Figure 1. Zika virus disease cases by country, EU/EEA, 2022

Source: Country reports.

The number of ZIKV disease cases reported by EU/EEA countries increased in 2022 compared with 2021 (n=7) and 2020 (n=22). However, it was much lower than in 2016, which saw the highest ever number of notifications (n=1 925) due to the global epidemic of ZIKV disease. Among the cases reported in 2022, two were during the first quarter, six during the second quarter, 13 during the third quarter, and 13 during the fourth quarter. No cases were reported from the EU's outermost regions.

Figure 2. Zika virus disease cases by month, EU/EEA, 2018–2022

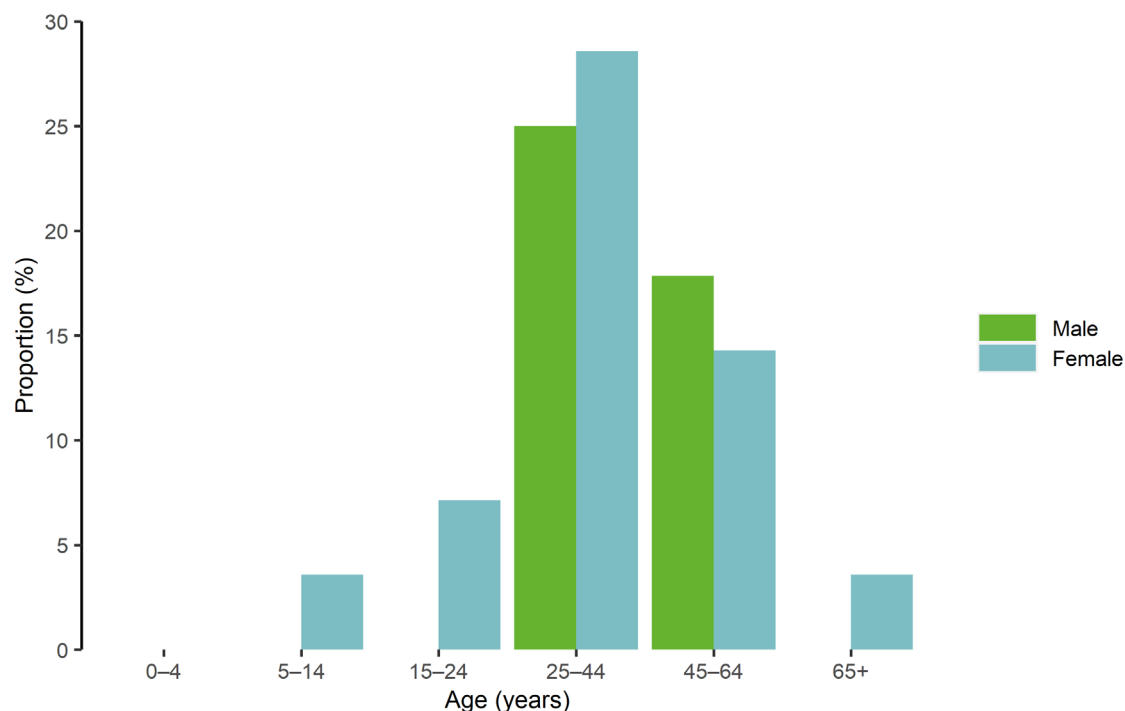
Source: Country reports from Austria, Belgium, Croatia, Czechia, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Luxembourg, Malta, the Netherlands, Norway, Portugal, Romania, Slovakia, Slovenia, Spain, and Sweden.

Gender was reported for all cases. The majority were female (n=19; 56%) and the overall male-to-female ratio was 0.6:1. Age was specified for all but one case and case notification was most frequent among those aged 25–44 years (n=16; 48%) followed by 45–64-year-olds (n=13; 39 %).

The pregnancy status was known for 12 female cases (63%), four of whom were pregnant. Three were known to have had healthy live births, however there was no information for the fourth case.

For 2022, all the cases were imported from outside the EU/EEA. The place of infection was known for all cases: 12 were infected in the Americas (Brazil (1), Colombia (1), Costa Rica (2), Cuba (4), Dominican Republic (1), Ecuador (1), Mexico (1) and Nicaragua (1)); 16 in Asia (Indonesia (3), India (1), Cambodia (1), Sri Lanka (1), Maldives (2), Nepal (1), Thailand (6) and Viet Nam (1)), and six in Africa (Cameroon (1), Nigeria (2), Senegal (1), Uganda (1) and South Africa (1)).

Figure 3. Zika virus disease proportion (%), by age and gender, EU/EEA, 2022



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

Discussion

The purpose of ZIKV disease surveillance is to analyse trends in the epidemiology of the disease, which can support the assessment of the public health risk in the EU/EEA, given the changing environmental drivers and ecological conditions (i.e. the presence and abundance of competent vectors). The large ZIKV disease outbreak in South America in 2016 led to an increased concern that the virus would be introduced into Europe, resulting in potential local transmission in areas where *Aedes albopictus* and *Ae. aegypti* mosquitoes are present. In March 2016, the surveillance of ZIKV disease was launched, with the main objectives being the early detection of locally acquired cases in the EU/EEA and the timely reporting of travel-associated cases, particularly those residing in EU/EEA areas where *Ae. albopictus* and *Ae. aegypti* are established, in order to trigger appropriate control measures [8].

After 2016, the number of imported cases of ZIKV disease in EU/EEA countries decreased. This was most likely due to the decreasing levels of transmission in the countries visited by European travellers. In addition, the travel restrictions imposed as a result of the COVID-19 pandemic probably contributed to the lower numbers in 2020 and 2021 [9]. The increase in 2022 is likely to be connected to increased travel since the lifting of restrictions.

In 2019, France reported three autochthonous vector-borne cases of ZIKV disease in the Var department (Provence-Alpes-Côte d'Azur). In response to the detection of these cases, national and local health authorities carried out active case finding, entomological investigations, vector-control activities, and awareness campaigns. These were the first reported autochthonous cases of ZIKV disease acquired via vector-borne transmission in the EU/EEA [10,11]. Since 2019, no autochthonous cases have been reported by EU/EEA countries.

The imported cases in 2022 suggest ongoing transmission in several countries throughout Central and South America and the Caribbean, South and South-East Asia, and sub-Saharan Africa.

Public health implications

The impact of ZIKV disease in Europe has mainly been limited to returning travellers, a few sporadic locally acquired cases due to sexual transmission, and in 2019, three autochthonous vector-borne transmissions.

The World Health Organization (WHO) advises against any restrictions on travel to, or trade with countries, areas, and territories with Zika virus transmission. WHO recommends that pregnant women avoid travelling to areas with ZIKV transmission, particularly during outbreaks, based on the increased risk of microcephaly and other severe congenital malformations [12,13]. All residents of, and travellers to areas with ongoing or historical ZIKV transmission should take precautions to prevent mosquito bites and be able to make informed decisions on whether to abstain from sex, practise safer sex, or avoid/delay pregnancy. Pregnant women and their partners, and anyone planning pregnancy should be provided with comprehensive information about the risks 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. toxoplasmosis, others (syphilis, hepatitis B), rubella, cytomegalovirus and herpes simplex) that have worldwide distribution [12,13].

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

Travellers who visit areas endemic for *Aedes*-borne diseases (e.g. chikungunya virus disease, dengue, ZIKV disease) and reside in areas of mainland EU/EEA where *Aedes albopictus* and/or *Aedes aegypti* mosquitos are established, should continue to apply personal protective measures after their return for a period of three weeks. This is to avoid infecting local mosquitoes, which could result in autochthonous transmission within mainland EU/EEA.

There is no licensed vaccine against ZIKV disease; prevention is based 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 repellents in accordance with the instructions indicated on the product label.

In addition, local authorities may consider conducting vector-control measures in areas where there have been imported cases, where outbreaks may occur.

References

1. Yun S-I, Lee Y-M. Zika virus: An emerging flavivirus. *Journal of Microbiology*. 2017;55(3):204 - 19.
2. Musso D, Gubler DJ. Zika Virus. *Clin Microbiol Rev*. 2016 Jul;29(3):487-524. Available at: <https://www.ncbi.nlm.nih.gov/pubmed/27029595>
3. 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. Available at: <https://www.ncbi.nlm.nih.gov/pubmed/29242091>
4. European Centre for Disease Prevention and Control (ECDC). Introduction to the Annual Epidemiological report. ECDC: Stockholm; 2024. Available at: <https://www.ecdc.europa.eu/en/surveillance-and-disease-data/annual-epidemiological-reports/introduction-annual>
5. European Centre for Disease Prevention and Control (ECDC). Surveillance systems overview for 2022. Stockholm: ECDC; 2023. Available at: <https://www.ecdc.europa.eu/en/publications-data/surveillance-systems-overview-2022>
6. European Centre for Disease Prevention and Control (ECDC). Surveillance Atlas of Infectious Diseases. Stockholm: ECDC; 2024.
7. Lernhout T (Sciensano). Personal communication. 2023.
8. 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) Available at: <https://www.ncbi.nlm.nih.gov/pubmed/29043960>
9. European Centre for Disease Prevention and Control (ECDC). Guidance for COVID-19 quarantine and testing of travellers. 12 March 2021. Stockholm: ECDC; 2021. Available at: <https://www.ecdc.europa.eu/sites/default/files/documents/Guidance-for-COVID-19-quarantine-and-testing-for%20travellers.pdf>
10. European Centre for Disease Prevention and Control (ECDC). Zika virus disease in Var department, France – 16 October 2019. ECDC: Stockholm; 2019. Available at: <https://www.ecdc.europa.eu/en/publications-data/rapid-risk-assessment-zika-virus-disease-var-department-france>
11. Giron S, Franke F, Decoppet A, Cadiou B, Travaglini T, Thirion L, et al. Vector-borne transmission of Zika virus in Europe, southern France, August 2019. *Eurosurveillance*. 2019;24(45):1900655.
12. World Health Organization (WHO). WHO guidelines for the prevention of sexual transmission of Zika virus: executive summary. 2019. Available at: <https://apps.who.int/iris/bitstream/handle/10665/311026/WHO-RHR-19.4-eng.pdf?ua=1>
13. European Centre for Disease Prevention and Control (ECDC). Rapid Risk Assessment - Zika virus transmission worldwide. 2019. ECDC: Stockholm; 2019. Available at: <https://ecdc.europa.eu/en/publications-data/zika-virus-transmission-worldwide>