



Serial number **BN2025/016**

Date **21/05/2025**

Event: Vector-borne disease in UK and Europe; risk ahead of summer

Notified by: Gillian Armstrong, TARZET, UKHSA

Authorised by:

Meera Chand, Deputy Director, TARZET, UKHSA
Edward Wynne-Evans, Director, Science, UKHSA
Derren Ready, Deputy Director, Public Health Microbiology, Science, UKHSA
Ruth Milton, Strategic Response Director, UKHSA
William Welfare, Regional Director, UKHSA
Dominic Mellon, Regional Deputy Director, UKHSA
Charlotte Hutchinson, Head of News, UKHSA

Contact:

Clinicians should contact their local infection services to discuss possible vector-borne disease cases. Infection Specialists seeking advice can contact the UKHSA Imported Fever Service (IFS) on 0844 778 8990 (available 24/7).

Clinicians seeking advice regarding testing from the Rare and Imported Pathogens Laboratory (RIPL) should telephone 01980 612348 (available 9am to 5pm, Monday to Friday).

UKHSA Health Protection Teams wishing to contact the national team regarding public health aspects of imported vector borne disease can contact travelhealth@ukhsa.gov.uk (in working hours)

IRP Level: Not applicable

Incident Lead: Not applicable

Instructions for Cascade:

- UKHSA Private Office Groups who cascade onwards within Groups
- UKHSA Health Protection in Regions:
- UKHSA Field Services
- UKHSA Health Protection Teams including UKHSA Regional Deputy Directors
- UKHSA Lab Management Teams
- UKHSA Regional Communications
- Generic inbox for each of the Devolved Administrations
- Inboxes for each of the Crown Dependencies
- DHSC CMO (*excluding internal UKHSA briefing notes*)
- OHID Regional Directors of Public Health
- National NHSE EPRR
- NHSE National Operations Centre

- **NHS Acute Trusts** to cascade to Emergency Departments, Acute Medical Services, neurology, infectious diseases, microbiology and virology, and infection prevention and control
 - **UKHSA microbiologists** to cascade to local NHS infection services and NHS and private laboratories
 - **Devolved Administrations** to cascade to Medical Directors and other DA teams as appropriate to their local arrangements
 - **NHS Trust infection leads** to cascade to relevant local services (e.g. Emergency Medicine, General Medicine, Acute Medicine)
 - **NHS labs/NHS infection leads/NHS microbiologists/NHS infectious disease specialists** to cascade to their teams
-
- Royal College of General Practitioners - Chair-RCGP@rcgp.org.uk
 - Royal College of Emergency Medicine - president@rcem.ac.uk
 - Royal College of Pathologists - president@rcpath.org
 - Royal College of Physicians - sarah.clarke@rcp.ac.uk
 - Royal College of Paediatricians and Child Health - s.w.turner@abdn.ac.uk

Summary:

The epidemiology of vector borne diseases (VBDs) is evolving worldwide, including within the UK and Europe. Some popular European travel destinations now pose a risk of infections such as dengue fever, West Nile virus (WNV) and Crimean-Congo Haemorrhagic fever (CCHF). Viruses such as tick-borne encephalitis (TBE), Usutu and now WNV have been detected in vectors within the UK. There is a risk that patients and clinicians may be unaware of recent changes in epidemiology and therefore not consider these diseases in the differential diagnosis of illnesses, particularly of neurological syndromes.

All clinicians are reminded:

- To consider VBDs in the differential diagnosis of patients with relevant clinical syndromes, even where there has been no history of travel abroad.
- To ensure that a travel history and outdoor exposure history is taken from patients with relevant clinical syndromes – particularly fever and rash or symptoms of central nervous system infection.
- That a 'significant' travel history for VBDs should now include countries in Europe. Patients may not mention travel to European destinations unprompted as there may not be a perception of risk.
- Of the requirement to notify certain [infectious disease syndromes](#) on clinical suspicion to UKHSA (e.g. meningitis / encephalitis / acute flaccid paralysis).
- To ensure that cases of undiagnosed encephalitis have samples sent to RIPL for testing for WNV and TBE, regardless of travel history.
- That input from infection services should be sought for illnesses that are clinically compatible with infection syndromes in returning travellers,

including travellers returning from countries in Europe, where the cause has not been identified through routine investigations.

- To consider VBDs such as dengue, WNV and CCHF in returned travellers from regions in Europe that are endemic for these infections, or where recent locally acquired cases have been reported, where there is a compatible clinical syndrome.

Background:

VBDs in the UK

Climate change has expanded the geographic range of environments suitable for mosquito and tick populations. Diseases spread by ticks and mosquitoes are most frequently diagnosed in the summer months. In the UK, the bacteria causing Lyme disease and TBE virus are now endemic in ticks and Usutu virus is endemic in mosquitoes. In addition, there is some evidence of WNV detection in mosquitoes in the UK.

Tick borne diseases

Lyme disease: a bacterial infection transmitted to humans through the bite of infected ticks; it is the most common tick-borne disease in Europe. In the UK, approximately 2,000 laboratory confirmed cases are diagnosed each year, but additional cases are diagnosed clinically in primary care without laboratory testing. Higher risk areas in the UK include the Scottish Highlands and Southern England, and in Europe include Scandinavian countries and eastern Europe.

TBE: a viral infection that causes minimal or no symptoms in the majority of people. There are 5 main subtypes of TBE virus, with the European subtype transmitted by *Ixodes ricinus* ticks. It is endemic in rural and forested areas of central, eastern and northern Europe. To date, there have been four probable or confirmed UK acquired human cases of TBE.

Mosquito borne infections

Usutu virus: While no locally-acquired human cases of Usutu virus infection have been reported in the UK, several blackbirds have tested positive, and the geographical range of infected mosquitoes has expanded over the past two years. The virus rarely causes disease in humans but can cause neurological infection in those with weakened immune systems.

WNV: Fragments of WNV genetic material have recently been detected in UK mosquitoes for the first time in samples from 2023 as part of a research study (see [Health Protection Report, volume 19, issue 5](#)). Whilst there is no evidence of WNV circulation in the UK to date, and no human cases acquired in the UK, it has expanded across Europe in mosquitoes rapidly and it would not be unexpected for future detections to occur in the UK.

All patients with undiagnosed encephalitis should have samples, initially

blood, sent to RIPL for testing for WNV, Usutu virus and TBE.

VBDs in Europe

Each summer many UK travellers visit European countries where local transmission of mosquito borne diseases such as dengue fever, WNV, chikungunya, and Zika virus has been reported over the past decade. In addition, viral tick-borne diseases such as CCHF and TBE have also increased across Europe. Clinicians seeing patients returning from European travel this summer are asked to consider the following tick and mosquito borne infections:

Tick borne infections

TBE: According to the European Centre for Disease Prevention and Control (ECDC) there were 3,690 cases of TBE across 22 EU/EEA countries in 2023. Incidence has risen over the last 15 years as TBE virus extends to new areas and altitudes, including detections in ticks in the UK (as above).

CCHF: a viral haemorrhagic fever spread by infected ticks. CCHF exposure is also associated with animal husbandry and slaughter. In the last 6 years, Bulgaria, Spain and Portugal have reported locally acquired CCHF infections, including fatalities. Larger areas of Europe are expected to become ecologically suitable for CCHF transmission, including the south of France where CCHF virus has been detected in ticks.

Lyme disease: Lyme disease is the most common tick-borne disease in North America and Europe. Higher risk areas in Europe include Scandinavian countries and eastern Europe.

Mosquito-borne infections

Dengue fever: Global case numbers of dengue fever remain very high, and exceptionally high numbers were reported in the Americas in 2024. High global cases numbers are anticipated to result in more cases imported into Europe, and consequently the potential exists for higher numbers of locally transmitted cases this summer. While most cases diagnosed in the UK are acquired outside of Europe, in 2024, locally acquired cases were reported in Italy (213), France (83) and Spain (8). France reported its highest number of outbreaks and locally acquired cases since the implementation of enhanced surveillance in 2006.

WNV: WNV has now spread geographically within Europe, with 713 locally acquired infections detected across 123 regions of 9 EU countries in 2023, including 22 regions where WNV cases had not previously been detected. In 2024, 19 EU countries reported locally acquired human cases of WNV infection.

Zika and chikungunya: Cases of locally acquired Zika virus and chikungunya virus in Europe are less common. However, in 2024 a locally acquired case of chikungunya was reported in the Paris region. Between 2007 and 2024, three clusters of chikungunya have been described in France, and two clusters have in Italy. In 2019, a

cluster of three locally acquired cases of Zika virus infection in France was reported.

Implications & Recommendations for NHS:

Primary care and travel medicine providers should advise patients pre- travel in line with country-specific guidance available at [NaTHNaC - Country List \(travelhealthpro.org.uk\)](https://www.travelhealthpro.org.uk). Patients visiting areas with a risk of tick- borne or mosquito-borne infections should receive advice on [bite avoidance](#).

Primary and secondary care clinicians should take a travel history from patients with infection syndromes and discuss clinical queries with local infection services where indicated. Input should be sought from infection services for returning travellers from countries in Europe where the cause of illness has not been identified through routine investigations. VBDs such as dengue, chikungunya, WNV and CCHF should be considered in the context of a compatible clinical syndrome and recent travel to endemic regions in Europe, or regions with recent locally acquired cases. Specialist advice on imported infections is available from the UKHSA Imported Fever Service on 0844 778 8990 (available 24/7)

Information on current outbreaks is available on the travel health website [NaTHNaC - Outbreak Surveillance \(travelhealthpro.org.uk\)](https://www.travelhealthpro.org.uk). For up-to date information on the epidemiology of vector-borne diseases in Europe, please see the [ECDC webpages](#).

Implications and recommendations for laboratories

Clinical microbiology and virology laboratories should be aware of the possibility of European acquisition of vector-borne diseases and should ensure that sample referral pathways are in place to ensure timely dispatch of samples to RIPL where testing is required for compatible clinical syndromes. Further advice is available through UKHSA RIPL.

Implications & Recommendations for UKHSA Regions

UKHSA Health Protection Teams and CPHIs should be aware of the potential for vector-borne disease cases acquired in Europe, in addition to the established risk of infection in endemic countries. Unusual or complex situations can be discussed as needed with the Travel Health team travelhealth@ukhsa.gov.uk

Sources of information: updates on distribution of disease

[Tick-borne encephalitis: epidemiology, diagnosis and prevention](#) (GOV.UK)

[West Nile virus: epidemiology, diagnosis and prevention](#) (GOV.UK)

[Crimean-Congo haemorrhagic fever: origins, reservoirs, transmission and guidelines](#) (GOV.UK)

[Lyme disease: signs and symptoms](#) (GOV.UK)

[Dengue fever: guidance, data and analysis](#) (GOV.UK)

[Chikungunya: characteristics, symptoms, diagnosis and epidemiology](#) (GOV.UK)

[Zika virus: clinical and travel guidance](#) (GOV.UK)

[Notifiable diseases and causative organisms: how to report](#) (GOV.UK)

Sources of information: background reading

[NaTHNaC country specific webpages](#)

[NaTHNaC outbreaks webpage](#)

[Dengue – Global Situation](#)

[ECDC Mosquito and tick maps](#)

[ECDC Weekly communicable threat reports](#)

[ECDC page on mosquito borne infections](#)

[ECDC Weekly updates on WNV epidemiology](#)

[ECDC page on CCHF in Europe](#)

[ECDC page on TBE](#)