Amsterdam UMC
University Medical Centers

A safari

In Europe

Bram Goorhuis
Infectious Diseases physician

Take home message

Regarding diagnosis of imported infections, epidemiology is more discriminating than the clinical presentation

World Health Organization

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Home / Disease Outbreak News / Item / Marburg virus disease – Rwanda

Disease Outbreak News

Marburg virus disease - Rwanda

Marburg infects 3 more in Rwanda; most outbreak cases tied to hospital clusters

Based on the current risk assessment, WHO advises against any travel restrictions and against any trade restrictions with Rwanda. For further information, please see WHO advice for international traffic in relation to the Marburg virus disease outbreak in Rwanda.

infections and one more death from the disease, raising the outbreak total to 61 cases, 14 of them fatal.

Focus

Vector-borne infections




Photo courtesy Paul Zborowski ©
The dengue mosquito (*Aedes Aegypti*)



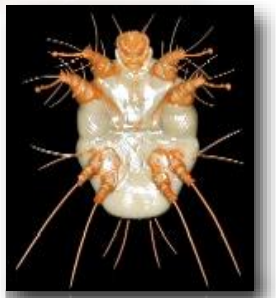
UF

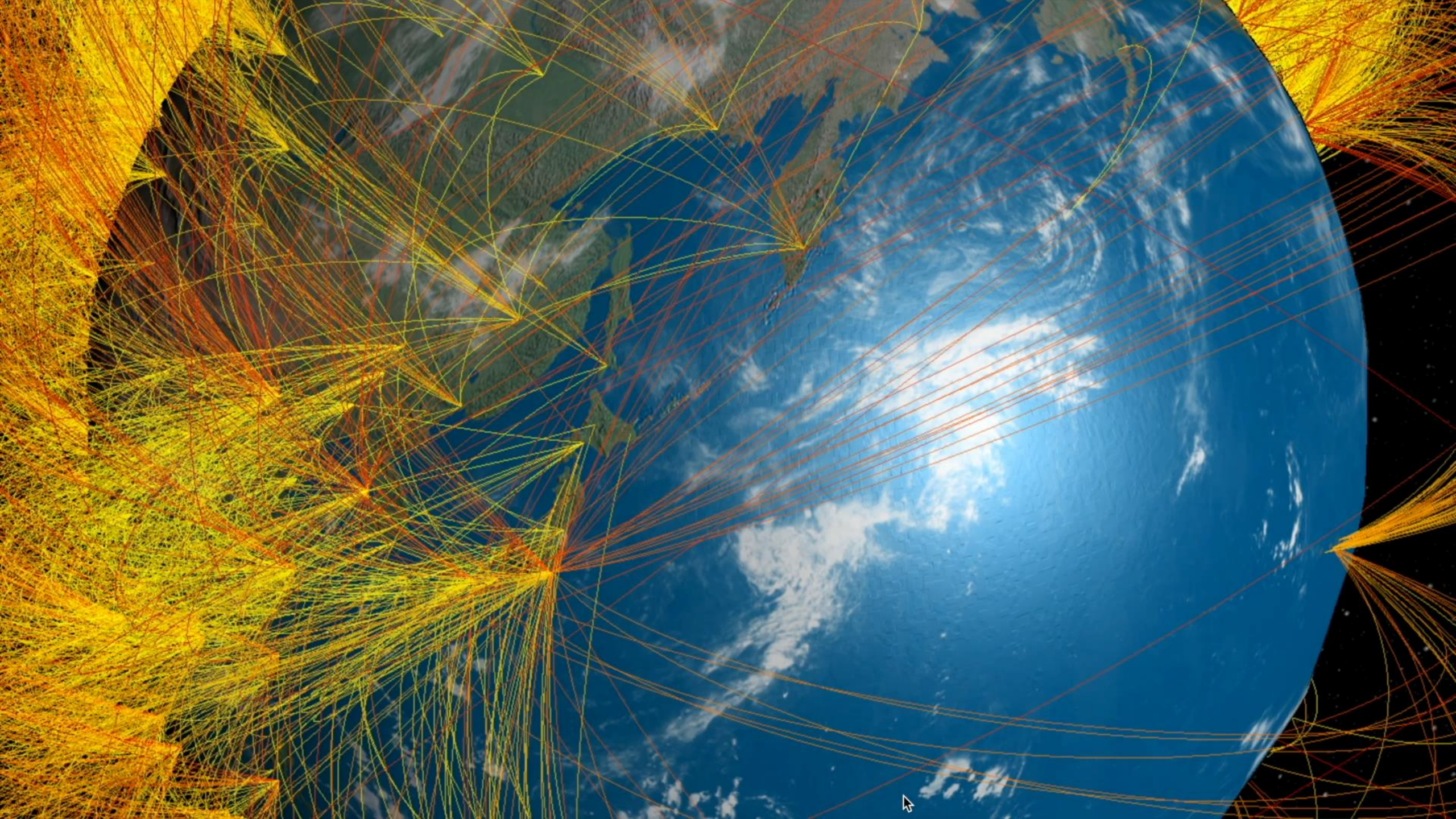








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Hendrik Haan
Insect magnet

The safari of calamities of Hendrik Haan

Naive Dutchman

Italy (Umbria)

- Fever
- Vomiting
- Headache
- Myalgia
- Nuchal rigidity

Which “vector-borne” disease would have been most likely past summer?

1. Malaria
2. Dengue
3. Sandfly fever
4. Chikungunya
5. West-Nile fever

Which “vector-borne” disease would have been most likely past summer?

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2. Dengue
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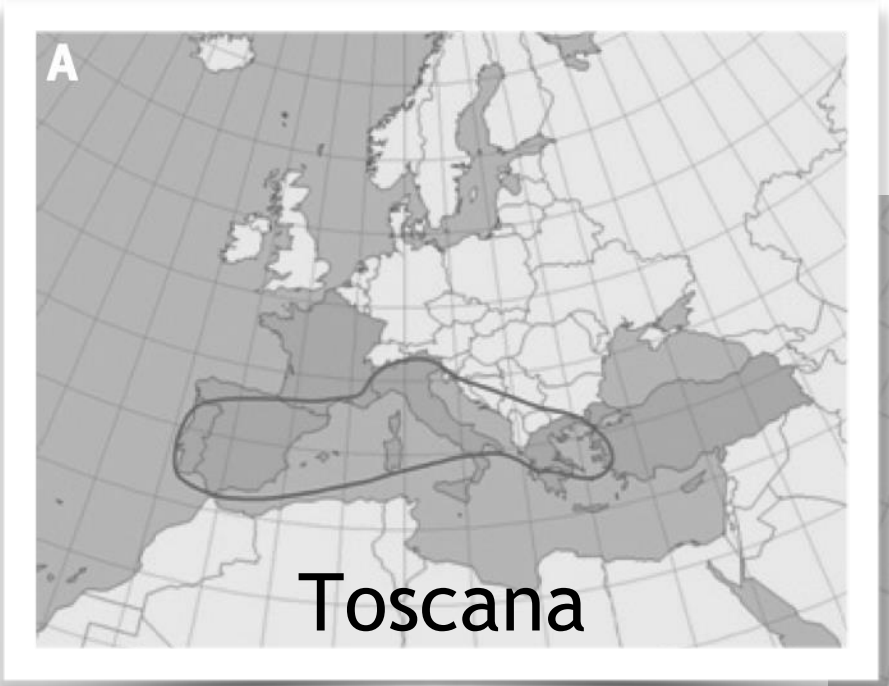
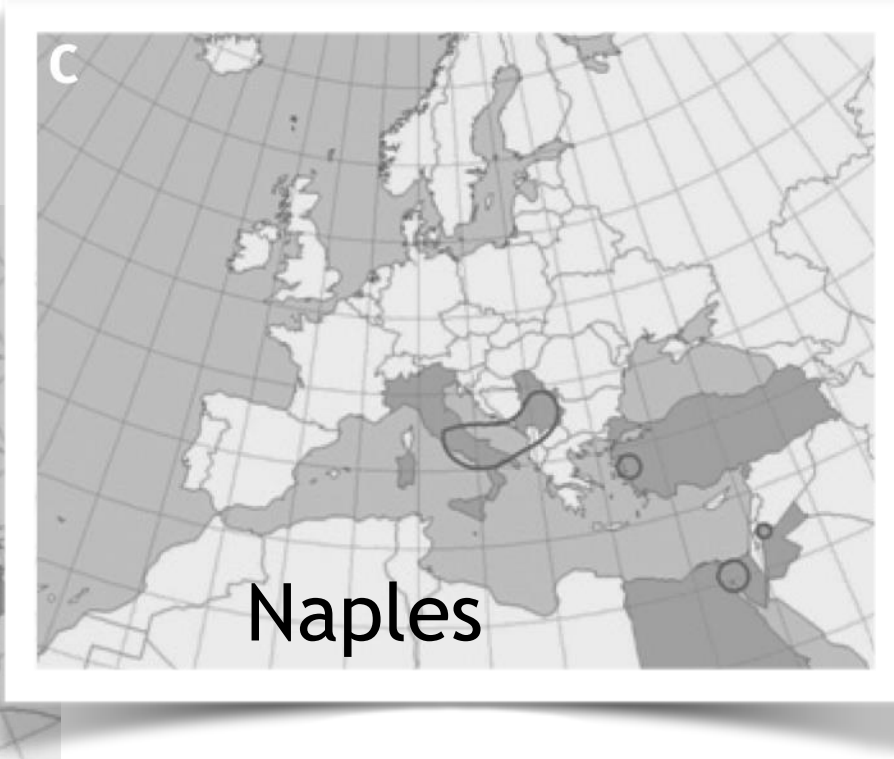
5. West-Nile fever

Depaquit J et al.
Arthropod-borne viruses transmitted by Phlebotomine sandflies in Europe: a review.
Euro Surveill. 2010 Mar 11;15(10):19507.





Toscana virus

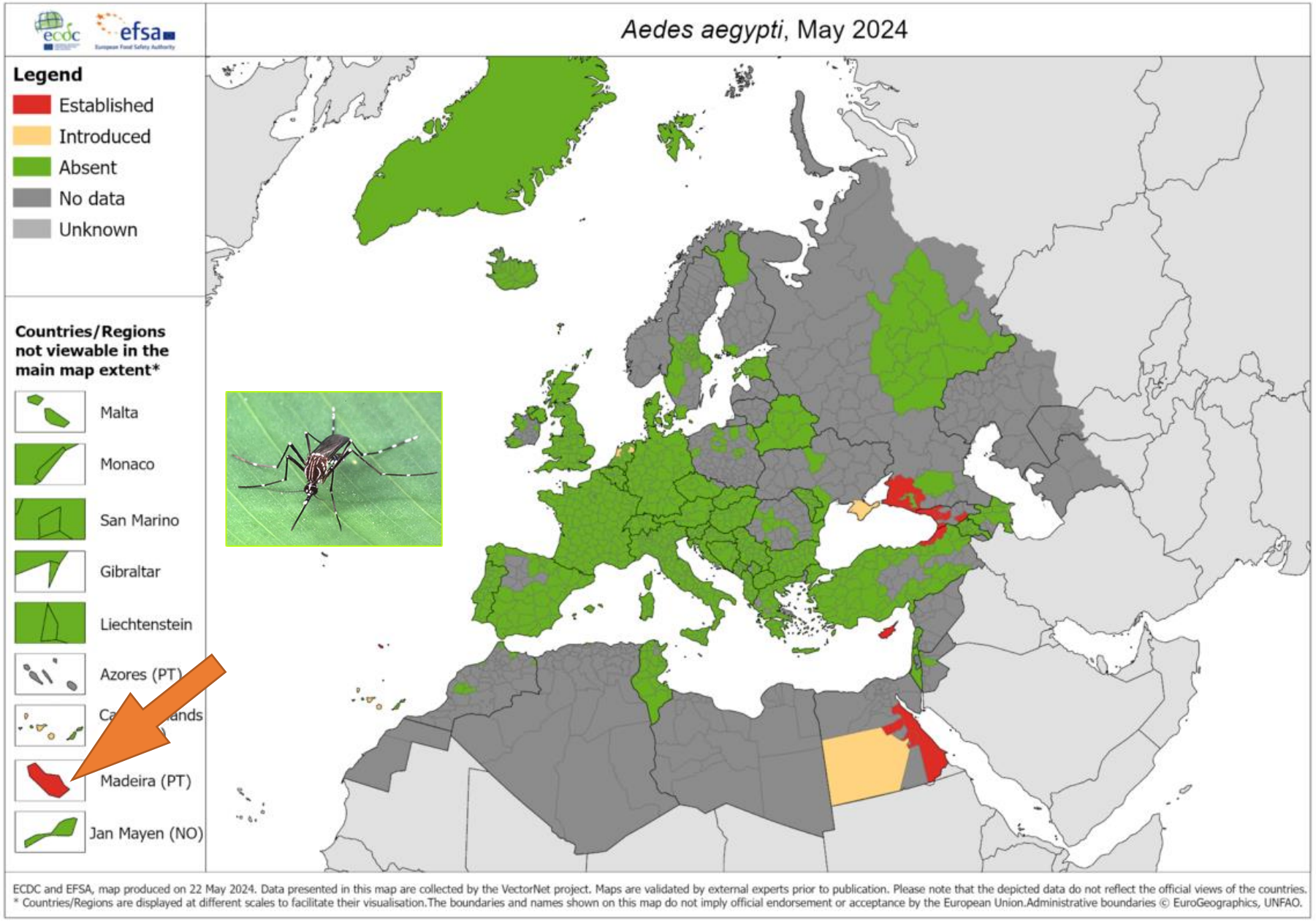
- Sandfly fever or “Pappataci-fever”
- High IgG seroprevalence in Central Italy
  - Forest workers 77%
  - City dwellers 22%
- In transmission season:
  - 80% of admissions with aseptic meningitis caused by Toscana virus
- Peak age 19-35 years

But what about dengue?

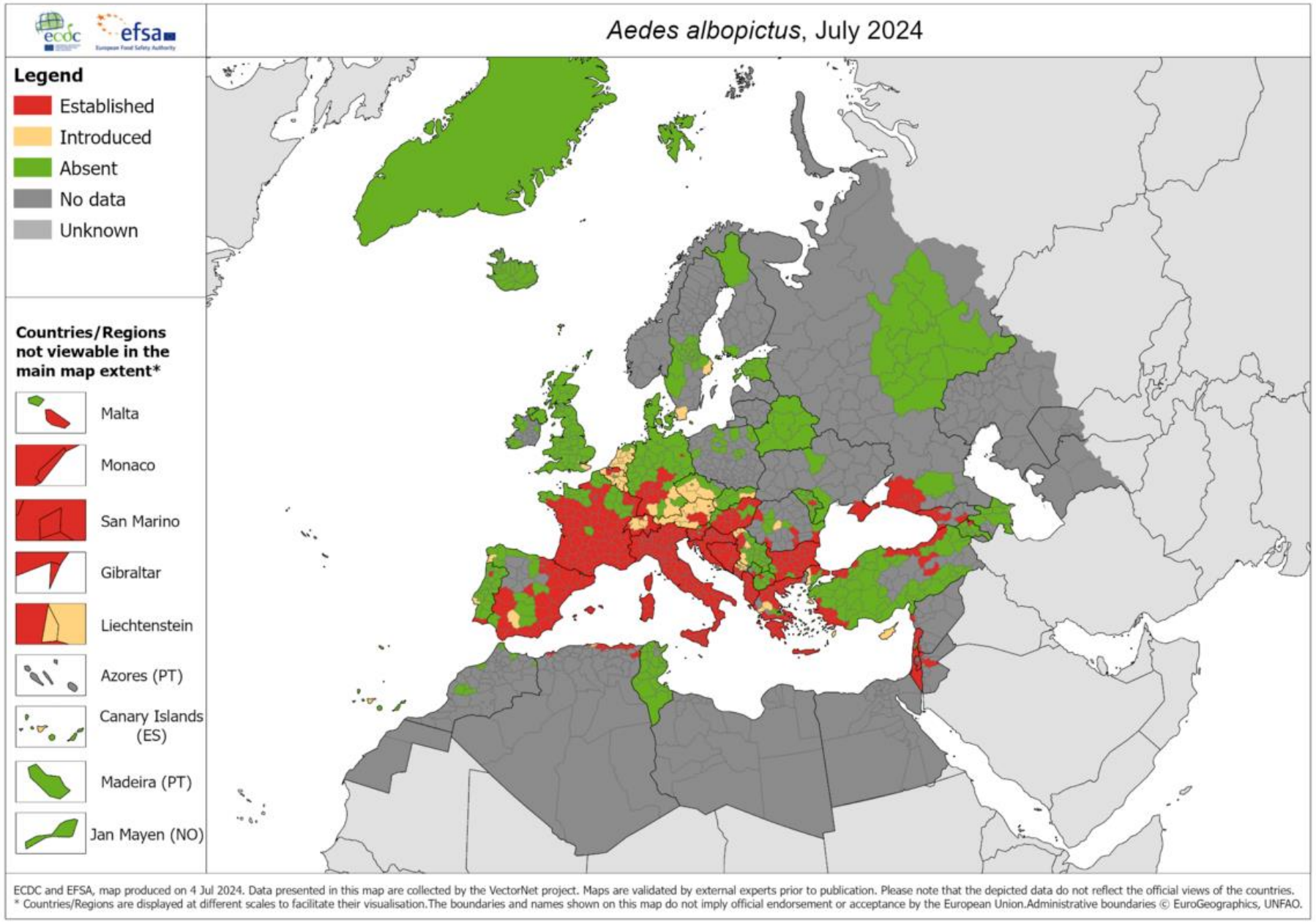
Aedes mosquito

- *Aedes aegypti* ~ Yellow fever mosquito
- *Aedes albopictus* ~ Tiger mosquito

- Vector of: yellow fever, dengue, chikungunya, zika


ecdc
efsa
European Food Safety Authority
Aedes aegypti, May 2024
Legend
Established
Introduced
Absent
No data
Unknown
Countries/Regions not viewable in the main map extent*
Malta
Monaco
San Marino
Gibraltar
Liechtenstein
Azores (PT)
Madeira (PT)
Jan Mayen (NO)
ECDC and EFSA, map produced on 22 May 2024. Data presented in this map are collected by the VectorNet project. Maps are validated by external experts prior to publication. Please note that the depicted data do not reflect the official views of the countries.
* Countries/Regions are displayed at different scales to facilitate their visualisation.The boundaries and names shown on this map do not imply official endorsement or acceptance by the European Union.Administrative boundaries © EuroGeographics, UNFAO.

2012 (december): 2050 cases, 58 travelers
121 admissions


ecdc
efsa
European Food Safety Authority
Aedes albopictus, July 2024
Legend
Established
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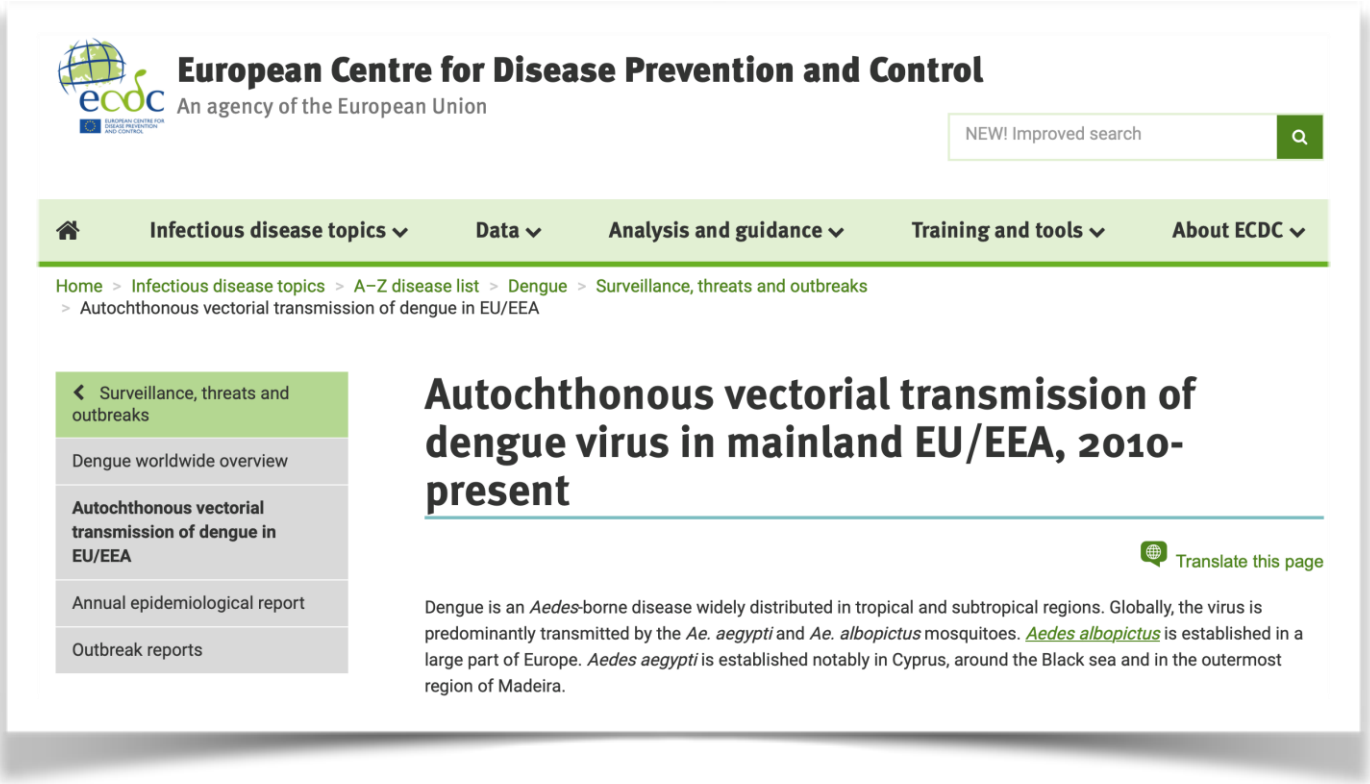
No data
Unknown
Countries/Regions not viewable in the main map extent*
Malta
Monaco
San Marino
Gibraltar
Liechtenstein
Azores (PT)
Canary Islands (ES)
Madeira (PT)
Jan Mayen (NO)
ECDC and EFSA, map produced on 4 Jul 2024. Data presented in this map are collected by the VectorNet project. Maps are validated by external experts prior to publication. Please note that the depicted data do not reflect the official views of the countries.
* Countries/Regions are displayed at different scales to facilitate their visualisation.The boundaries and names shown on this map do not imply official endorsement or acceptance by the European Union.Administrative boundaries © EuroGeographics, UNFAO.

Dengue in Europe



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Home > Infectious disease topics > A–Z disease list > Dengue > Surveillance, threats and outbreaks > Autochthonous vectorial transmission of dengue in EU/EEA

- Surveillance, threats and outbreaks
- Dengue worldwide overview
- **Autochthonous vectorial transmission of dengue in EU/EEA**
- Annual epidemiological report
- Outbreak reports

Autochthonous vectorial transmission of dengue virus in mainland EU/EEA, 2010-present

Translate this page

Dengue is an *Aedes*-borne disease widely distributed in tropical and subtropical regions. Globally, the virus is predominantly transmitted by the *Ae. aegypti* and *Ae. albopictus* mosquitoes. *Aedes albopictus* is established in a large part of Europe. *Aedes aegypti* is established notably in Cyprus, around the Black sea and in the outermost region of Madeira.

	France	Croatia	Spain	Italy		Total
2010	2	2				4
2011						
2012						
2013	1					1
2014	4					4
2015	8					8
2016						
2017						
2018	8		6			14
2019	9		1			10
2020	13			10		23
2021	2					2
2022	65		6			71
2023	43		3	82		128
2024	78		8	172		258

A 2020 case of bad luck…

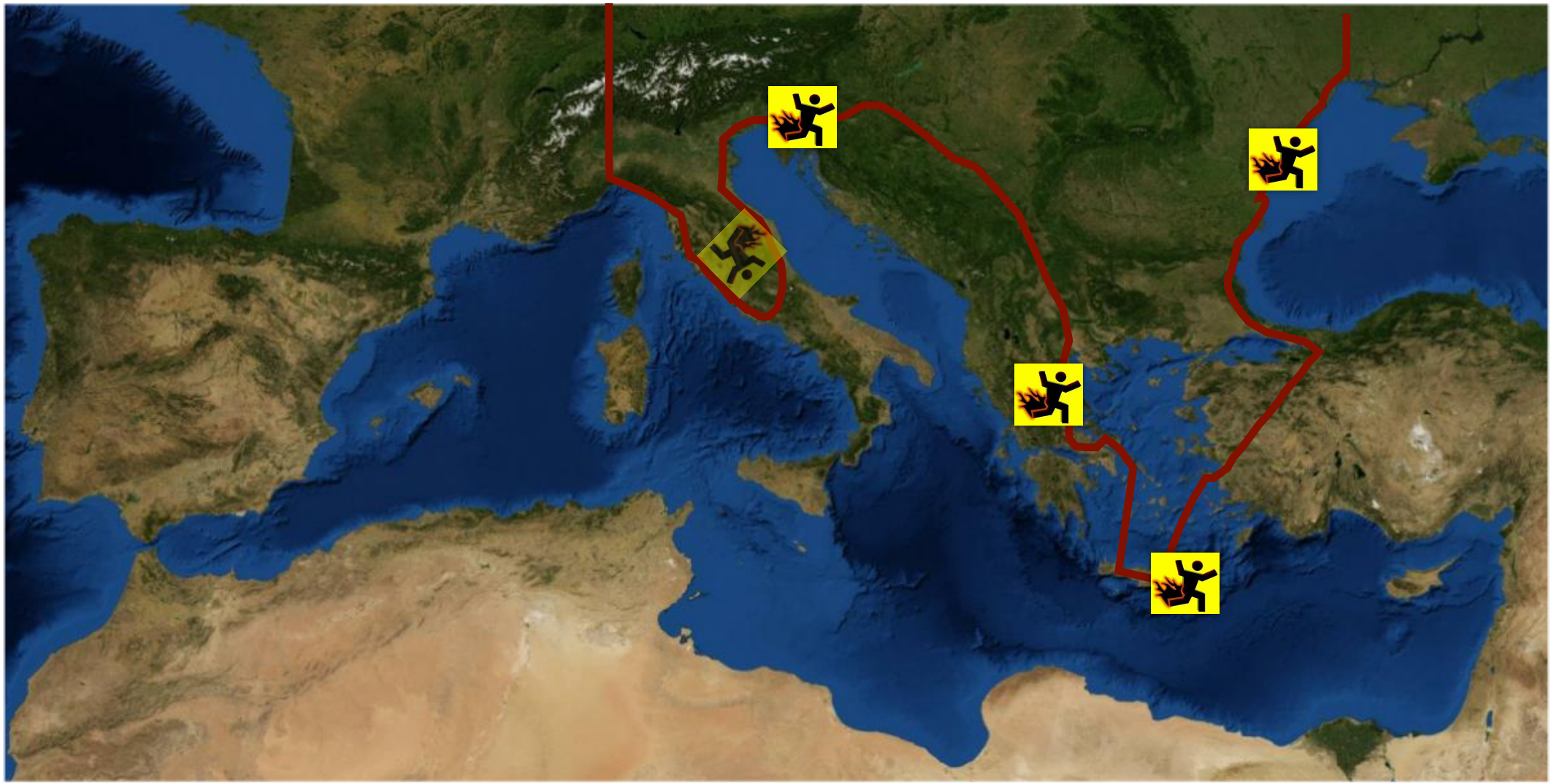
Chikungunya

Infection with chikungunya virus in Italy: an outbreak in a temperate region

G Rezza*, L Nicoletti*, R Angelini, R Romi, A C Finarelli, M Panning, P Cordioli, C Fortuna, S Boros, F Magurano, G Silvi, P Angelini, M Dottori, M G Ciufolini, G C Majori, A Cassone, for the CHIKV study group†

Lancet 2007; 370: 1840–46

- 205 cases
- Index: imported infection from India



Italy (Veneto)

- Fever
- Vomiting
- Headache
- Myalgia
- Nuchal rigidity

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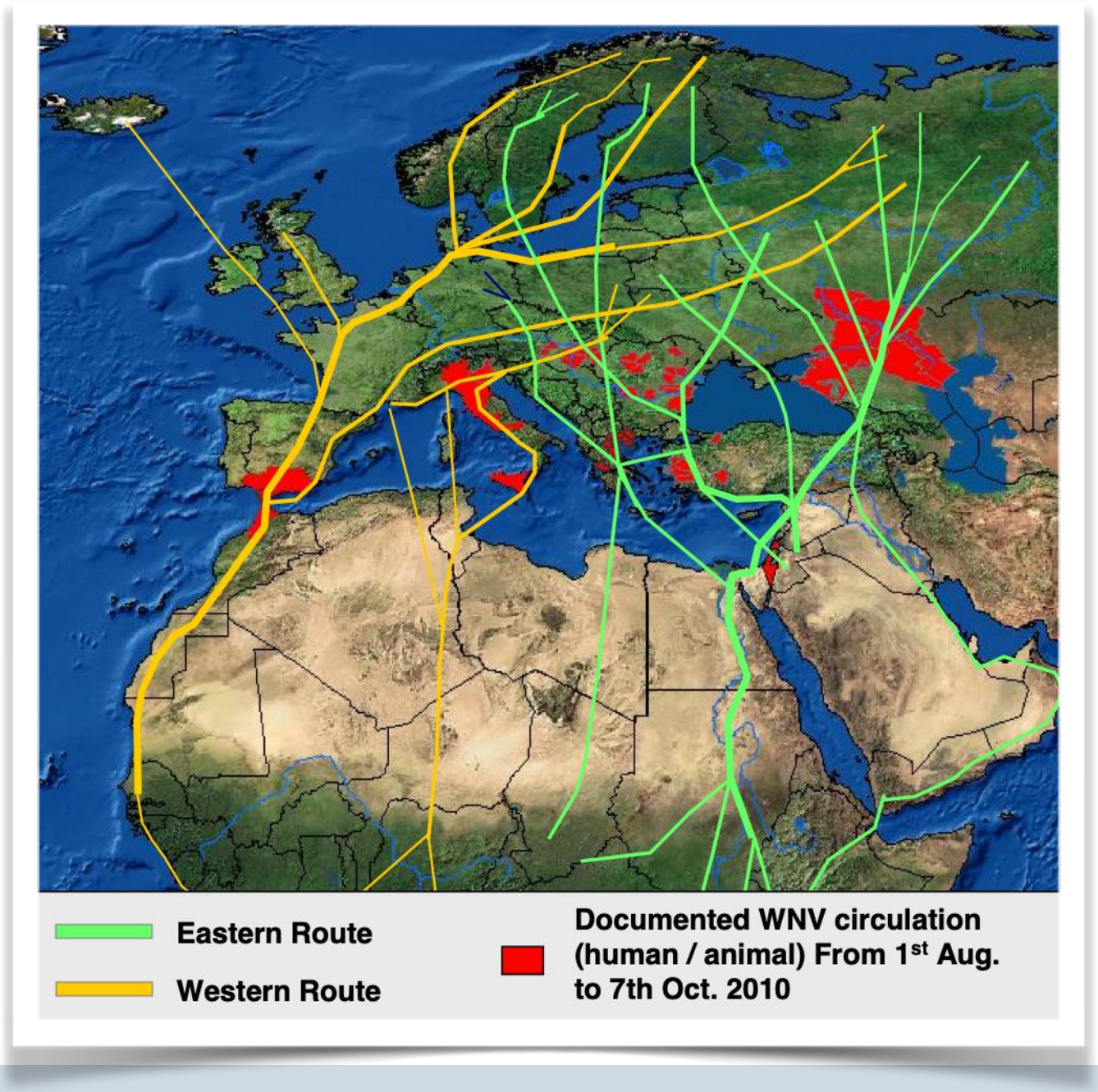
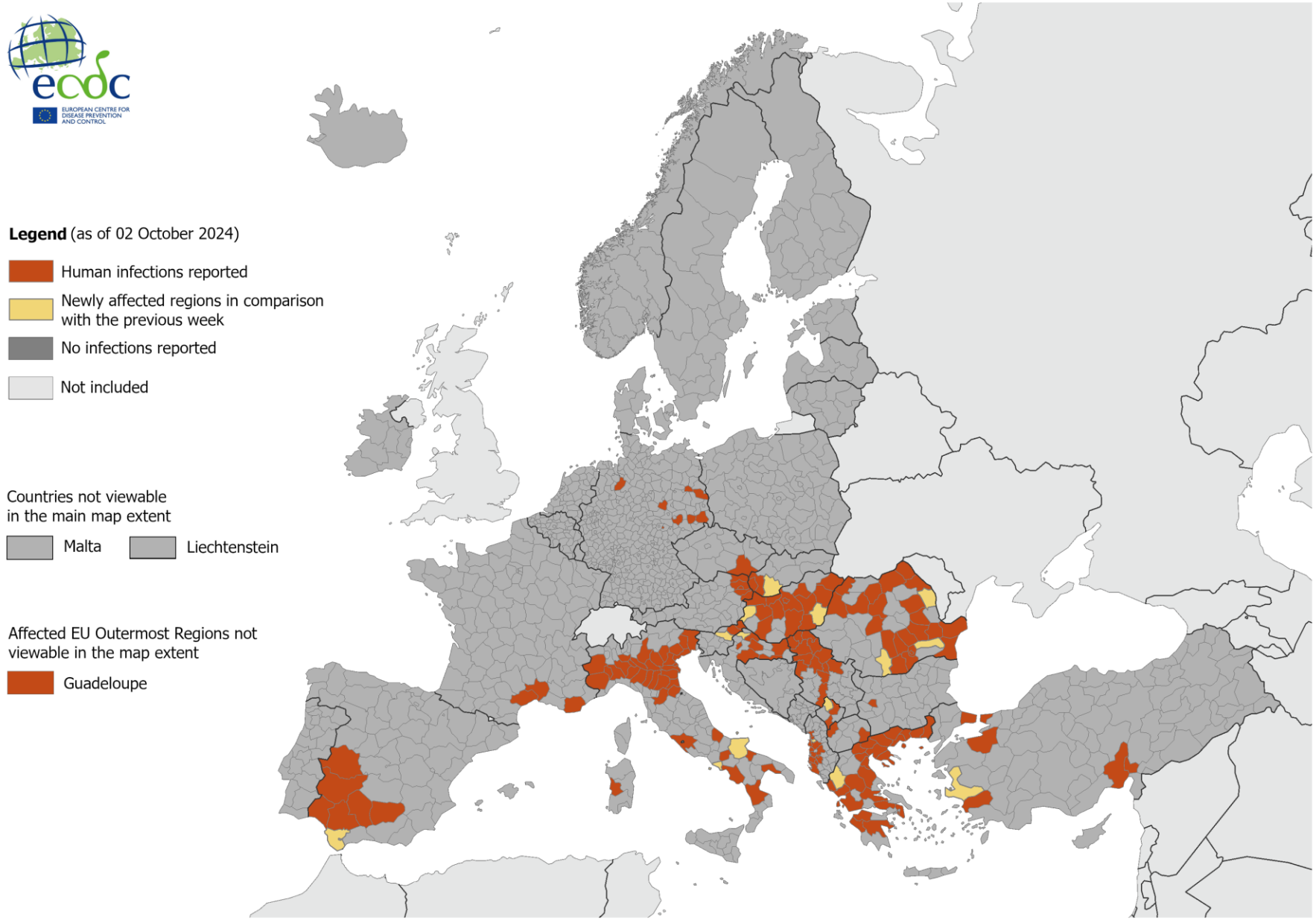
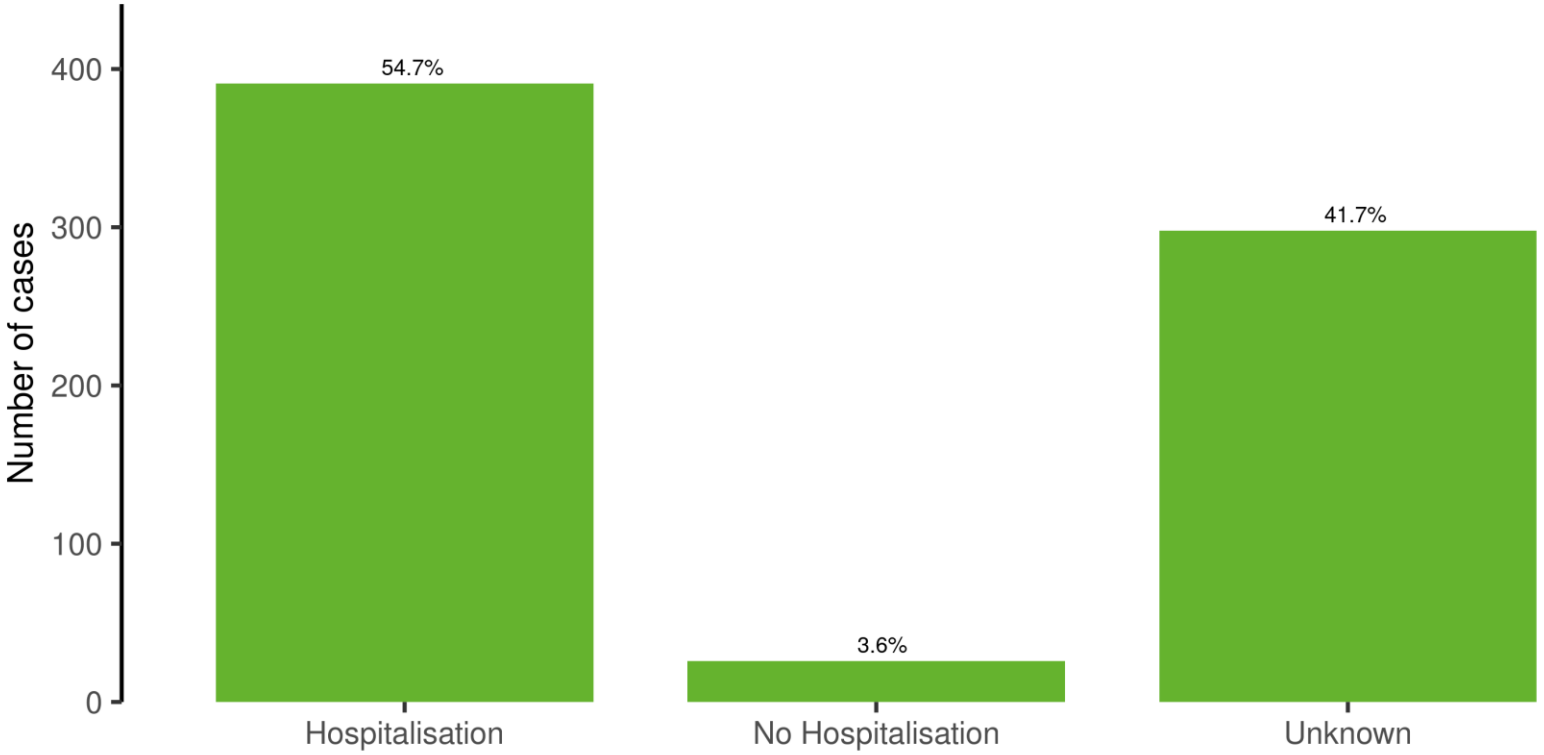


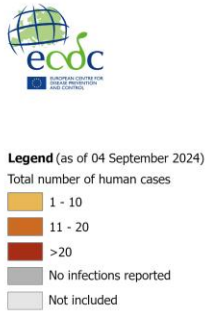
Source: http://www.episouth.org/outputs/wp6/CCHF-WNV-ARBOZOONET_NOV_2010.pdf

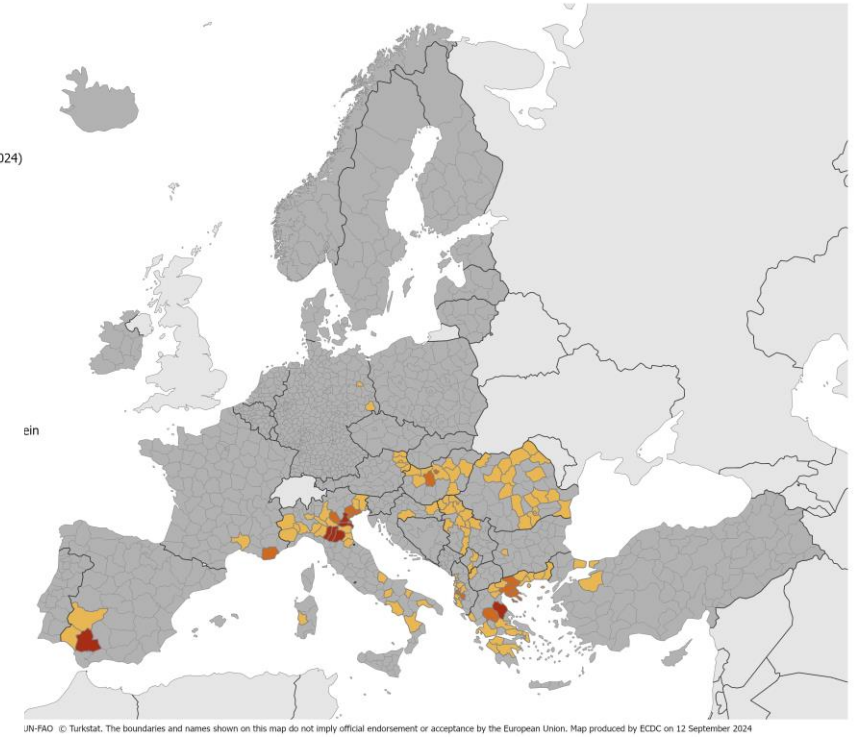
2024

1202 cases (mortality: 8%)



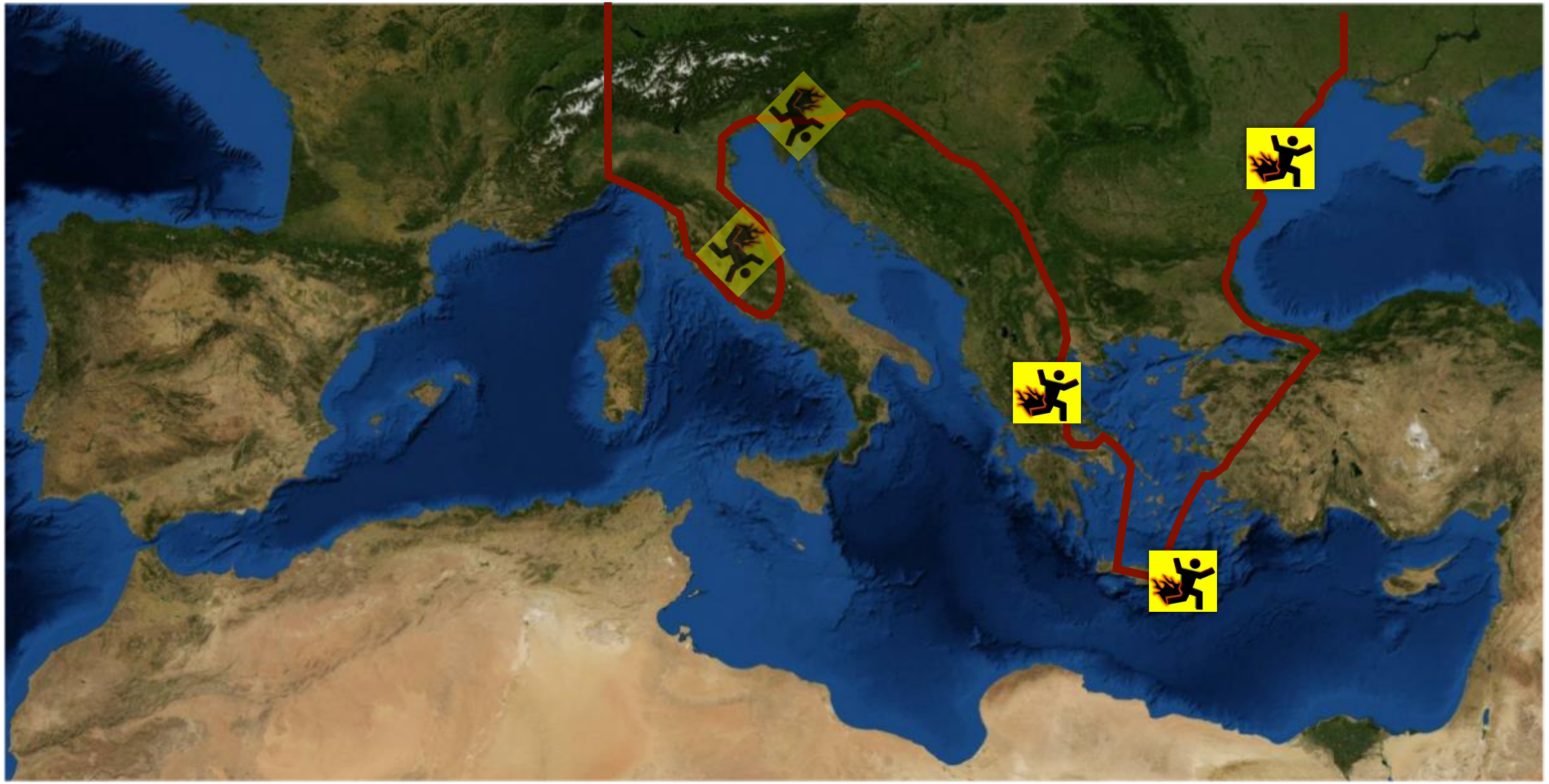






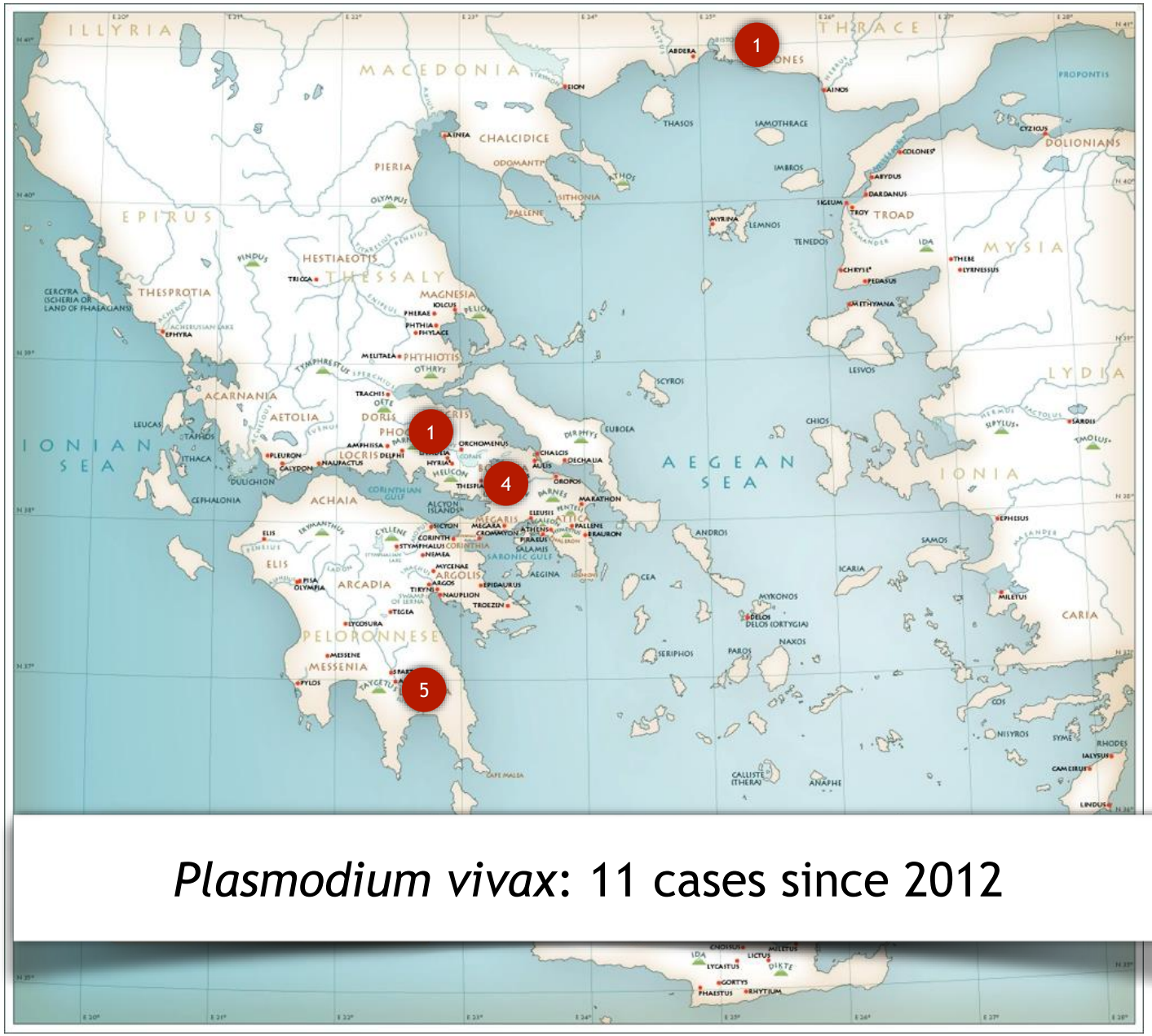
2024

715 cases
51 deaths (7%)



Greece (Attica)

- Fever
- Vomiting
- Headache
- Myalgia



Plasmodium vivax: 11 cases since 2012

Greece (Crete)

- Fever
- Headache
- Myalgia
- Generalized skin rash

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4. Crimean Congo hemorrhagic fever

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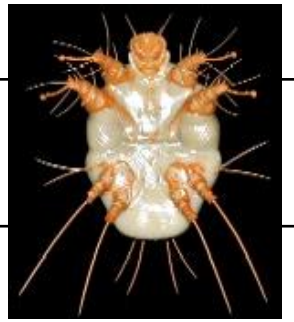
Rickettsiae	Ticks	Fleas	Lice	Mites
Spotted fever group (Selection)	*R. rickettsii* RMSF *R. conorii* MSF *R. africae*	*R. felis*		*R. akari* Rickettsialpox
Typhus group		*R. typhi* Murine typhus Endemic typhus	*R. prowazekii* Epidemic typhus	
Scrub typhus group				*O. tsutsugamushi* Scrub typhus
Anaplasmosis	*A. phagocytophilum*			
Ehrlichiosis	*E. chaffeensis*			

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ISSN: 1080-6059

EID Journal > Volume 28 > Number 4—April 2022 > Main Article

Volume 28, Number 4—April 2022

Research Letter

High Prevalence and Low Diversity of *Rickettsia* in *Dermacentor reticulatus* Ticks, Central Europe

Alena Balážová, Gábor Földvári, Branka Bilbija, Eva Nosková, and Pavel Široký✉

Author affiliations: University of Veterinary Sciences Brno, Brno, Czech Republic (A. Balážová, B. Bilbija, P. Široký); Centre for Ecological Research, Budapest, Hungary (G. Földvári); Masaryk University, Brno (E. Nosková); Central European Institute of Technology, Brno (P. Široký)

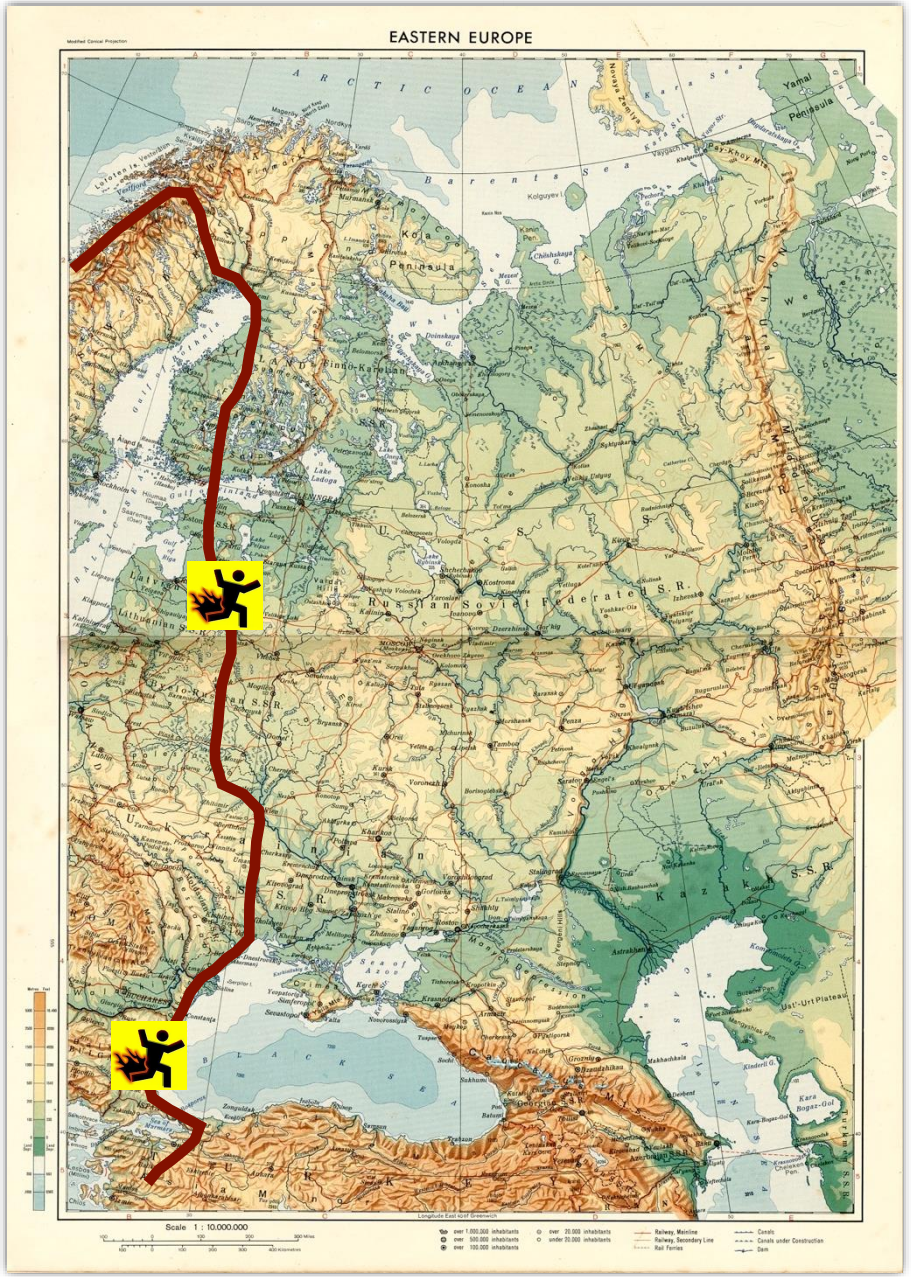
Cite This Article

Abstract

We collected 1,671 *Dermacentor reticulatus* ticks from 17 locations in the Czech Republic, Slovakia, and Hungary. We found 47.9% overall prevalence of *Rickettsia* species in ticks over all locations. Sequence analysis confirmed that all tested samples belonged to *R. raoultii*, the causative agent of tick-borne lymphadenopathy.

The ornate dog tick, *Dermacentor reticulatus*, is a proven vector of pathogens of public health and veterinary importance, including tick-borne

Eastern



Europe

Bulgaria

- Fever
- Headache
- Myalgia
- Abdominal pain
- Vomiting
- Petechial skin rash

Which “vector-borne” disease would have been most likely past summer?

1. Dengue
2. Tick-borne encephalitis
3. Chikungunya
4. Crimean Congo hemorrhagic fever

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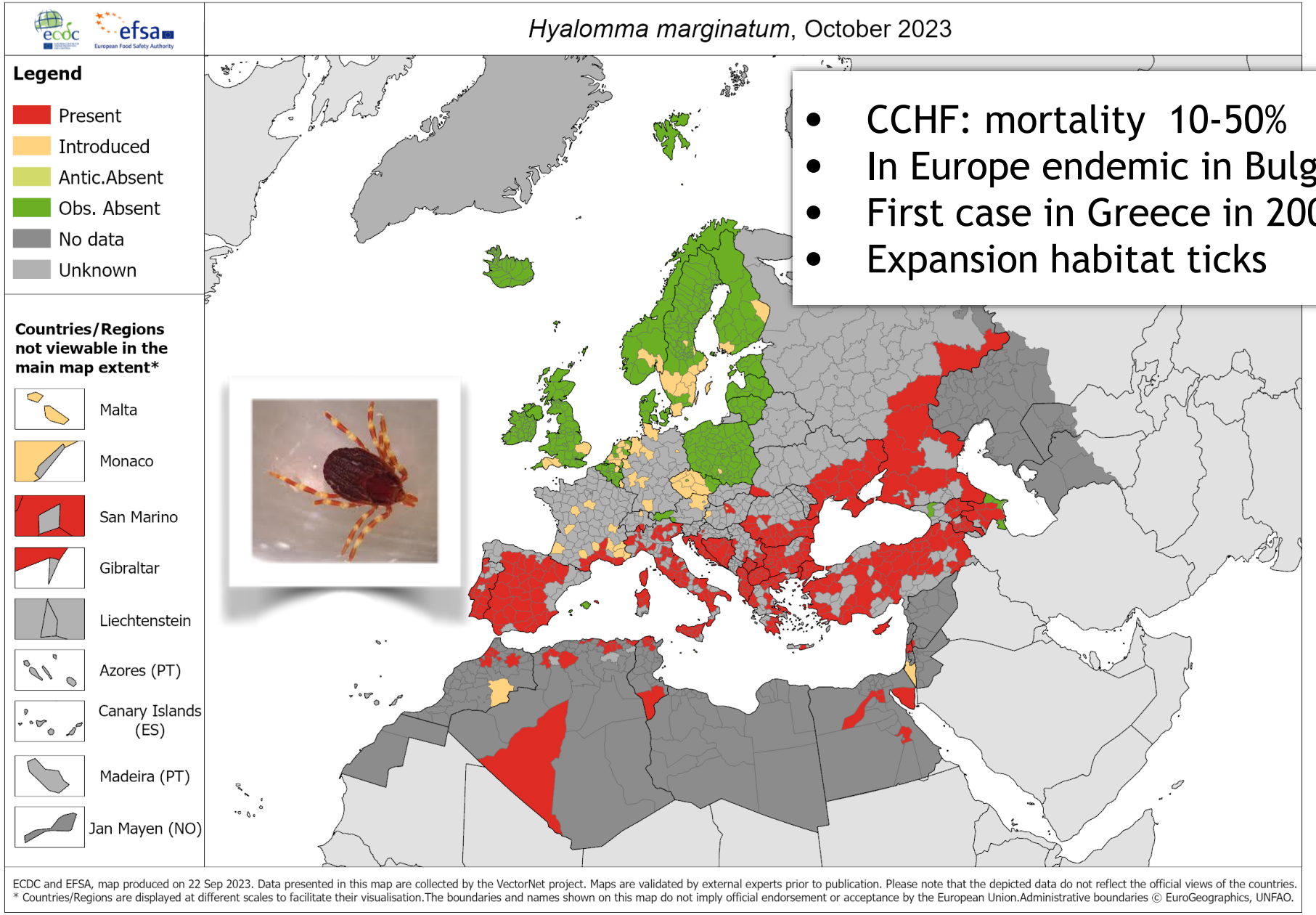

- CCHF: mortality 10-50%
- In Europe endemic in Bulgaria
- First case in Greece in 2008
- Expansion habitat ticks

CCHF Spain 2013-2021

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HEALTH

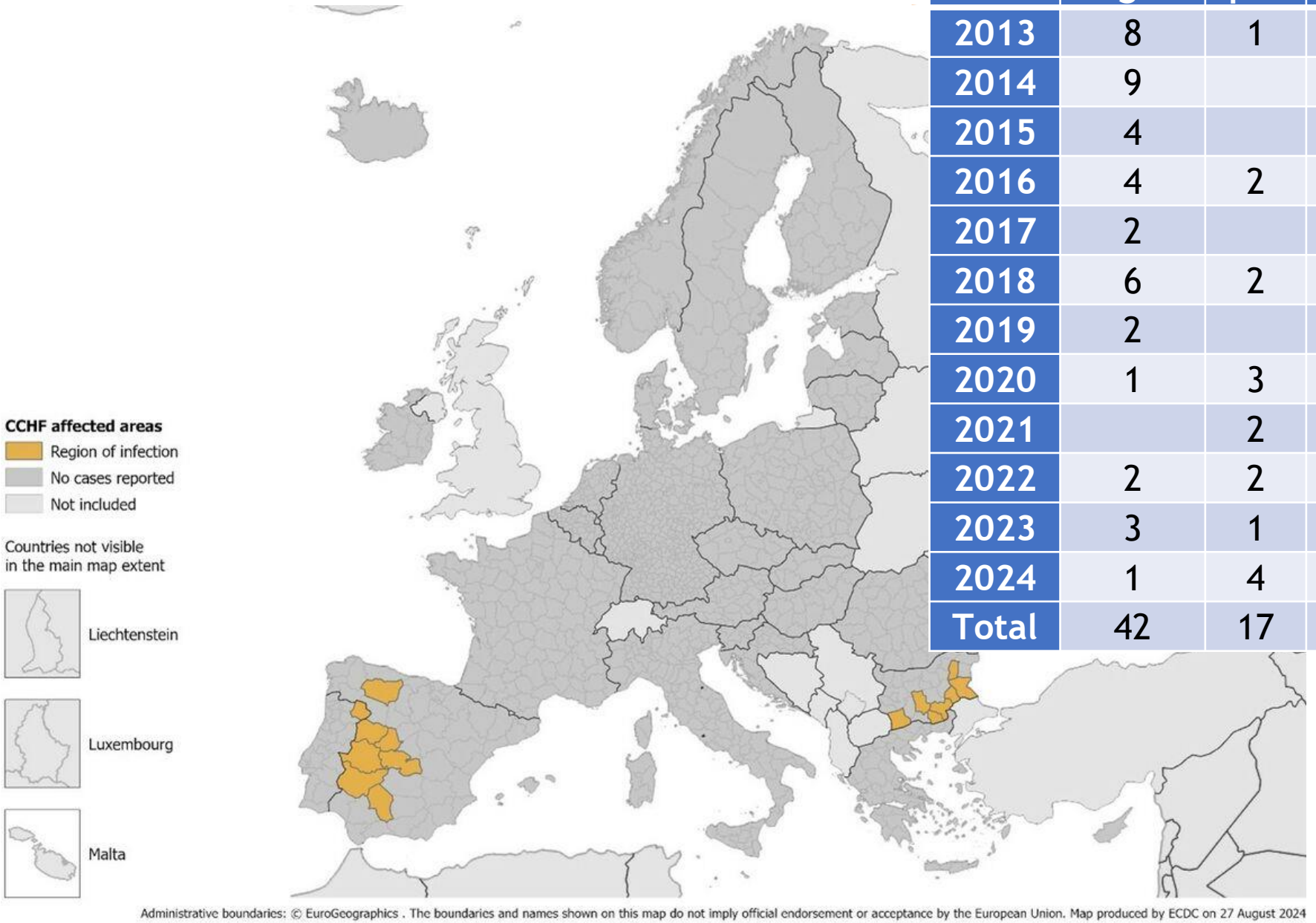
First detection of Crimean-Congo haemorrhagic fever virus in the South of France

RESULTS & IMPACT • 25 October 2023

A team from CIRAD has just demonstrated the presence of Crimean-Congo haemorrhagic fever virus in ticks of the species Hyalomma marginatum collected in the Pyrénées Orientales department (Occitanie region). This is the first time this virus has been detected in France. However, no human cases have been reported so far in the country.

Lorenzo Juanes H et al. Emerg Infect Dis. 2023

Sánchez-Seco MP et al. Emerg Infect Dis. 2021



	Bulgaria	Spain	Greece	Portugal	Total	Fatal
2013	8	1			9	2
2014	9				9	1
2015	4				4	2
2016	4	2			6	1
2017	2				2	
2018	6	2	1		9	2
2019	2				2	
2020	1	3			4	1
2021		2			2	1
2022	2	2			4	2
2023	3	1			4	
2024	1	4		1	6	3
Total	42	17	1	1	61	15 (25%)

Northern Europe

Baltic states

- Fever
- Headache
- Joint aches
- Nausea

Which “vector-borne” disease would have been most likely past summer?

1. Anaplasmosis
2. Tick-borne encephalitis
3. Babesiosis
4. Rickettsial disease

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2. Tick-borne encephalitis
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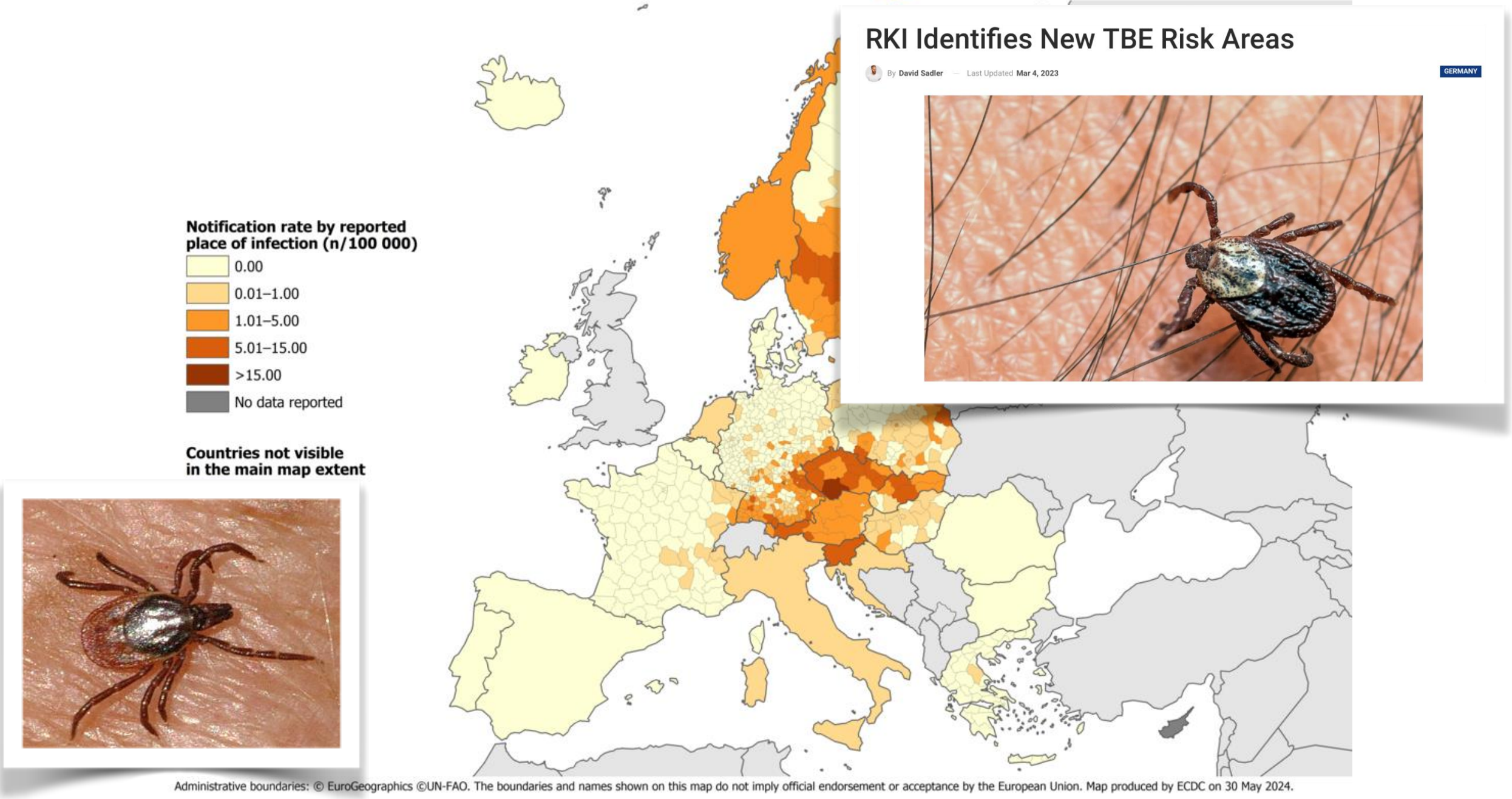
4. Rickettsial disease



RKI Identifies New TBE Risk Areas

By David Sadler — Last Updated Mar 4, 2023

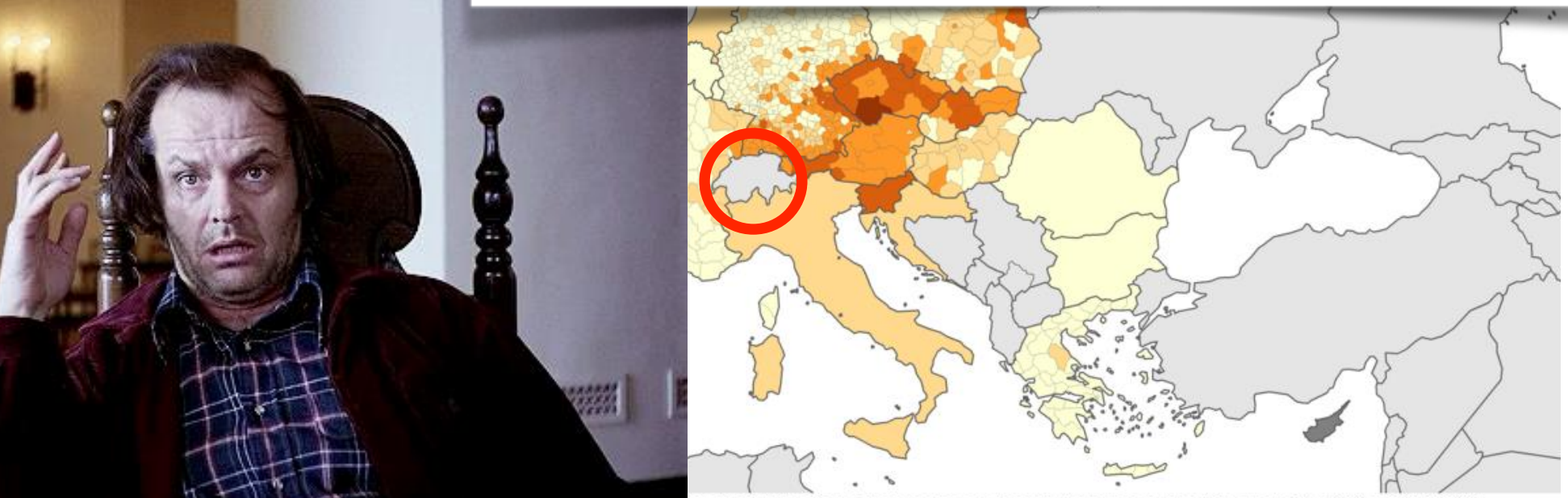
GERMANY

Administrative boundaries: © EuroGeographics ©UN-FAO. The boundaries and names shown on this map do not imply official endorsement or acceptance by the European Union. Map produced by ECDC on 30 May 2024.

Abo Ein Zeckenpatient erzählt

«Ich hätte sterben können»

Über 300 Menschen haben sich diesen Sommer in der Schweiz mit Zecken-Enzephalitis infiziert. Einer davon ist der frühere Spitzensportler Jann Roffler.



SWI swissinfo.ch
Swiss perspectives in 10 languages

Ticks in Switzerland more dangerous than previously thought

Researchers at the University of Zurich have found viruses or bacteria in almost all the ticks they have examined, including the Alongshan virus, which was discovered a few years ago.

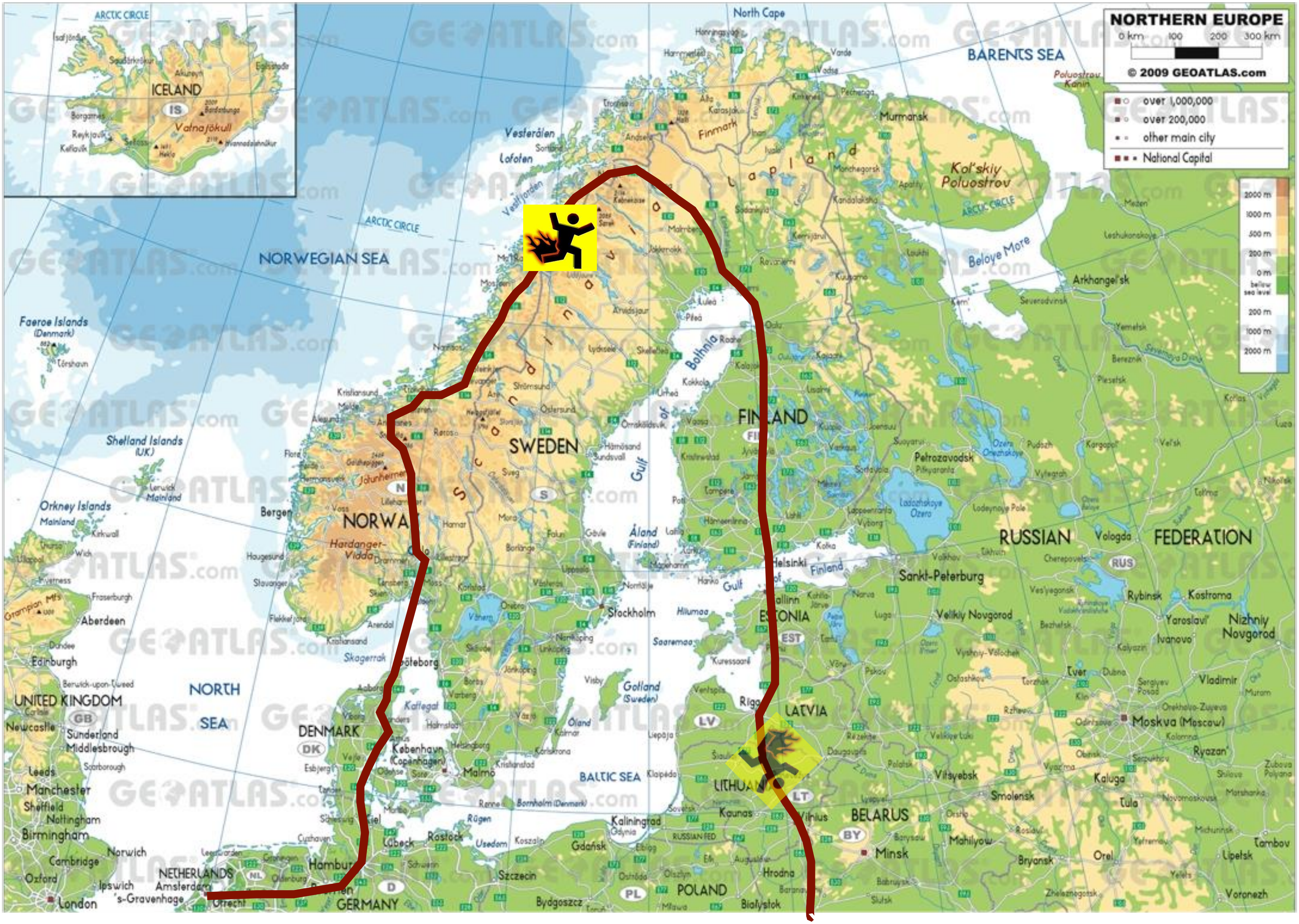
November 13, 2023 - 20:01 · 2 minutes

Keystone-SDA

Other language: 1 (EN original)

“Almost every tick can potentially make you ill,” virologist Cornel Fraefel from the University of Zurich, who took part in the study, told the Swiss News Agency Keystone-ATS on Monday. “In many ticks, we found several pathogens at the same time.”

The Alongshan virus (ALSV) was detected in almost twice as many ticks (7.6%) as the meningoencephalitis virus (4.2%). Around 77% of ticks also tested positive for at least one non-viral pathogen. Of the ticks collected in urban areas, 83.9% contained at least one non-viral pathogen.


NORTHERN EUROPE
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over 1,000,000
over 200,000
other main city
National Capital
ICELAND
NORWEGIAN SEA
BARENTS SEA
NORTH SEA
BALTIC SEA
SWEDEN
NORWAY
FINLAND
DENMARK
ESTONIA
LATVIA
LITHUANIA
BELARUS
POLAND
GERMANY
NETHERLANDS
UNITED KINGDOM
RUSSIAN FEDERATION
Faeroe Islands (Denmark)
Shetland Islands (UK)
Orkney Islands
Lofoten
Vesterålen
North Cape
Stockholm
Helsinki
Sankt-Peterburg
Moskva (Moscow)
København (Copenhagen)
Bergen
Riga
Tallinn
Minsk
Vilnius
London
Amsterdam
Hamburg
Arkhangel'sk
Murmansk

The great Norwegian vector…

Conclusions

- Continuous changes in epidemiology
    - Climate
    - Vectors
    - Travel behaviour
    - Socio-economic factors

Amsterdam UMC
Universitair Medische Centra

Center for Tropical & Travel Medicine
Department of Infectious Diseases
Division of Internal Medicine
Amsterdam, The Netherlands

Relevant for travel advice / general

SARS-CoV-2 epidemiological update EU, ECDC: https://www.ecdc.europa.eu/en/news-events/epidemiological-update-covid-19-transmission-eueea-sars-cov-2-variants-and-public

ECDC weekly communicable disease threats report: https://www.ecdc.europa.eu/sites/default/files/documents/Communicable_disease_threats_report_3-9_September_2023_week_36.pdf

Vaccine preventable diseases
- Measles
  - Romania: https://outbreaknewstoday.com/romania-measles-outbreak-460-confirmed-cases-since-october-13553/
  - UK (England): https://www.gov.uk/government/publications/measles-epidemiology-2023/confirmed-cases-of-measles-in-england-by-month-age-and-region-2023
  - D.R. Congo: https://outbreaknewstoday.com/dr-congo-kasai-oriental-province-measles-tally-tops-1000-in-2023-2023/
- Whooping cough, Denmark: https://outbreaknewstoday.com/whooping-cough-epidemic-in-denmark-73769/
- Japanese, encephalitis
  - South Korea: https://outbreaknewstoday.com/south-korea-reports-1st-japanese-encephalitis-case-of-2023/
  - Nepal: https://www.nepalnews.com/s/nation/woman-dies-from-japanese-encephalitis-in-nawalpur

Europe

West Nile virus, Europe, ECDC-update: https://www.ecdc.europa.eu/en/publications-data/west-nile-virus-human-cases-compared-previous-seasons-6-september-2023

Dengue, local transmission, Italy, update: https://outbreaknewstoday.com/italy-dengue-update-10-autochthonous-cases-reported-year-to-date-70004/

Legionellosis, Poland: https://promedmail.org/promed-post/?id=8712040

Author: A. Goorhuis, M.D.

Epidemiology alert September 11th 2023

North America

Malaria, local transmission, USA (Florida, Texas), CDC-update: https://www.cdc.gov/mmwr/volumes/72/wr/mm7236a1.htm?s_cid=mm7236a1_w

Vibrio vulnificus, USA (Texa), fatal: https://outbreaknewstoday.com/vibrio-vulnificus-death-reported-in-galveston-county-texas-59169/

Dengue, local transmission, USA (Florida), update: https://outbreaknewstoday.com/dengue-in-florida-3-additional-locally-acquired-cases-reported-59556/

Latin America

Dengue
- Guatemala: https://outbreaknewstoday.com/guatemala-declares-national-emergency-due-to-dengue-cases-up-152-percent-this-year-76867/
- Costa Rica: https://outbreaknewstoday.com/costa-rica-health-alert-issued-due-to-increase-in-dengue-cases-47248/
- Dominican Republic: https://outbreaknewstoday.com/dominican-republic-reports-increase-in-dengue-22275/

Asia

Dengue
- Bangladesh: https://outbreaknewstoday.com/who-director-bangladesh-is-experiencing-its-most-severe-outbreak-of-dengue-on-record-76459/
- Singapore: https://outbreaknewstoday.com/singapore-risk-of-a-surge-in-dengue-cases-as-dengue-virus-serotype-1-denv-1-gains-dominance-78541/
- Taiwan: https://outbreaknewstoday.com/taiwan-reports-more-than-1300-additional-dengue-cases-last-week-3-deaths-60155/

Leptospirosis, Philippines: https://outbreaknewstoday.com/philippines-bacolod-city-reports-more-than-200-increase-in-leptospirosis-99755/

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Thank you for your attention!

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