

Holiday season means risk of tropical diseases in Europe

Warmer weather and summer travel put tropical mosquito-borne diseases on the European health authorities' radar.

The warming climate has unpredictable and wide-ranging impacts on the environment. Some climate effects on human health are direct, such as extreme weather and rising sea levels that threaten low-lying areas. Other climate change effects on health are no less unpredictable but more indirect.

The Asian Tiger mosquito and Yellow Fever mosquito species are now present in parts of Europe thanks to warmer temperatures, bringing the risk of tropical diseases with them.

August and September are the primary transmission season for mosquito-borne diseases.

The Asian Tiger mosquito and Yellow Fever mosquito species, which can act as disease vectors between humans, have facilitated the rise in cases of tropical diseases in Southern Europe in the last decade.

Italy saw the first locally acquired case of "chikungunya" in Europe, with over 200 individuals affected. Chikungunya causes fever and severe joint pain that is often debilitating and can vary in duration.

There have also been cases of "dengue fever" in France, Madeira, and Croatia. Dengue causes bleeding, low levels of blood platelets and plasma, joint pain, and fever.

And the first EU cases of "West Nile fever" were detected in Italy and Romania in 2016.

The Asian Tiger mosquito is now listed as one of the top 100 invasive species by the Invasive Species Specialist Group.

It is thought that the invasion of the foreign mosquito species occurred when eggs were contained within bamboo imports to Europe, and in standing water found within imported vehicle tires.

Misdiagnosis

The rising trend in cases of tropical diseases is concerning.

While they are treatable, European doctors are not familiar enough with the diseases to diagnose them when patients have symptoms. The patient can, due to late or misdiagnosis, become much sicker before the appropriate treatment begins.

A further challenge for healthcare systems is that the diseases concerned are transmissible by blood.

The region of Ravenna, Italy, that saw the Chikungunya outbreak in 2007, suspended blood donations in the affected area to reduce the risk of transmission through blood transfusion. This was challenging because treatment for Chikungunya includes blood transfusion.

Ravenna's health authorities were faced with rising demand for blood and a lower supply, which it then had to acquire externally from other regions.

For the same reasons, donations of blood by those who have travelled to an endemic region for tropical diseases, like malaria, would be refused for a period of months after their return as a precaution.

The European Centre for Disease Prevention and Control (ECDC) monitors tropical disease outbreaks. While data reporting by member states of the ECDC is not mandatory, the level of compliance is high on tropical diseases.

Close monitoring and regular public updates are put into action during the transmission season. Disease fact sheets for governments and healthcare professionals are important aspects of the response, given how healthcare professionals usually know little to nothing about tropical diseases.

The ECDC's resources are beneficial whether the disease is acquired in Europe, or when infected people return from travelling to endemic regions such as Africa and the Indian subcontinent.

The pharmaceutical industry has been criticised for not investing sufficiently in tropical disease vaccines and treatments. However, governments, academia and industry are increasingly turning their attention to finding new treatments for tropical diseases in recent years.

Public private partnerships, including the EU's Innovative Medicines Initiative, have also sought to drive more research on neglected diseases.

NGOs have run campaigns to raise awareness and funding for the developing world on tropical diseases.

There are also organisations such as the Bill and Melinda Gates Foundation, which has provided hundreds of millions of dollars in research funding towards the prevention of tropical diseases, with programmes on bed nets and mosquito control.

Climate change driving disease

According to the World Health Organization, malaria kills more than half a million victims worldwide every year. Around 40 percent of the world's population is exposed to this disease, and 250 million cases are reported annually.

The growing number of cases in Europe provide important lessons for healthcare systems on how climate change can be a driver of disease migration and how migration, travel and insect disease factors fit into that picture.

Steve Bridges is an independent health policy adviser in Brussels. His Health Matters column takes a closer look at health-related policies, issues and trends in the EU.

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