

Letter to the editor

Dengue Cases in Hanoi, Vietnam: Unseasonal Surge Foreshadows Increased Incidence That Demands Organized Preventive Action

Andrew W. Taylor-Robinson ^{a, b, *}

^aCollege of Health Sciences, VinUniversity, Hanoi, Vietnam

^bCenter for Global Health, Perelman School of Medicine, University of Pennsylvania, Philadelphia, PA, USA

Dengue is now a major public health risk to the people of southeast Asia, as forewarned in an editorial published by a regional biomedical journal a decade ago.⁽¹⁾ In the intervening years, this threat has escalated due to dramatic changes in climatic factors that have facilitated the extended distribution and increased numbers of the vector mosquito *Aedes* spp.. Like its neighboring countries, Vietnam has not been spared the public health impact of this arboviral infection. Together with other mosquito-transmitted diseases, dengue is regarded almost exclusively as a problem confined to the southern part of the nation, especially Ho Chi Minh City, which experiences a year-round tropical climate. This (mis)perception has dictated national policy on vector surveillance, control, and prevention. Guidelines on dengue for central and north Vietnam now need to be urgently revised. This is exemplified by the situation in Hanoi, the capital city, located in the north of the country, in which there was a surge in dengue cases in the first quarter of 2024, a time when dengue transmission is historically not at its peak.

The surge in dengue has seen 513 cases reported in Hanoi during the first 10 weeks of the year, as confirmed by the city's Center for Disease Control,⁽²⁾ which (in line with the policy of the Vietnam Government Ministry of Health) does not routinely disclose information on notifiable diseases. Dengue is the most predominant mosquito-borne disease in Hanoi, a densely populated city of more than 8.5 million people. This unseasonal spike in dengue highlights the critical need for an orchestrated and comprehensive mosquito prevention program to combat the urban spread of the disease. Currently, the authorities of the

city support local communities in implementing outbreak prevention measures by assessing dengue risk at the request of the local communities. These inspections are led by the Department of Health, but they are not integrated across adjoining districts through a centrally coordinated, funded and managed government task force or public health agency.

In contrast, the incidence rates of malaria, another mosquito-borne disease, have markedly decreased recently in Vietnam, notably in the hot spot southwestern Mekong Delta where the vector *Anopheles* mosquitoes are prevalent. This decrease in incidence rates was in response to a sustained and ongoing World Health Organization-administered national control, prevention, and elimination program. Whereas malaria is thankfully on the decline, dengue remains a major threat that demands urgent attention. However, the nature, behavior, habitat, and transmission efficiency of the vectors are quite different. Thus, they require similar but distinct infection prevention and control strategies.

Affordable and easily implementable dengue infection control and prevention steps include draining small pools of water, which serve as local sites for mosquito breeding, and spraying large ponds, lakes, and reservoirs with larvicides. Provincial, district, and community disease control committees in Hanoi should communicate and coordinate their efforts with public health volunteers to identify and regularly treat municipal bodies of water in order to decrease vector density. Additionally, and equally important, a widespread program of active and ongoing community engagement should be undertaken. This program should inform urban residents of effective and simple measures to prevent the adult female *Aedes* spp., which can transmit the dengue virus, from flying around a peridomestic environment.⁽³⁾

An environmental sanitation and larval eradication campaign may require public funds to be diverted from other healthcare concerns, such as controlling the quality of the ambient air in Vietnam's capital city.

*Correspondence to: Andrew W. Taylor-Robinson, College of Health Sciences, VinUniversity, Hanoi, Vietnam.

E-mail: andrew.tr@vinuni.edu.vn

Received: May 5, 2024

Revised: September 11, 2024

Accepted: October 15, 2024

However, the spike in dengue cases observed so far in 2024 is consistent with a rising trend. In the previous year, 500 out of 579 communes in Hanoi reported occurrences of dengue, indicating that outbreaks were not confined to high risk areas or those where surveillance is frequently performed. For the first 31 weeks of 2023, a total of 3,180 dengue cases were recorded, which was 5.7-fold higher than in 2022.⁽⁴⁾

This spike in dengue incidence and an evolving epidemiological pattern are set to recur because of weather conditions that favor mosquito blooms, especially throughout the hot and humid summer months. Additionally, increasingly unpredictable meteorological patterns due to climate change, such as the extremely destructive Typhoon Yagi of September 2024, will only serve to reinforce this escalation. This might be a portent of the alarming dengue episodes that have been occurring elsewhere in Asia in the last couple of years. These observed patterns indicate the impact of climate change on infectious diseases around the world, including in Vietnam.

The notion that dengue is only a concern in the south of the country is now outdated. Residents of Hanoi will be repeatedly and increasingly at risk of

contracting this often debilitating and sometimes life-threatening mosquito-transmitted viral disease if the problem continues to be overlooked. The city authorities should be guided by the old adage that prevention is better than cure. This should prompt them to take proactive measures for prevention and control. This action will bring direct public health benefits. It is also a more cost-effective solution than disease diagnosis and treatment.

References

1. Editorial office of Asian Biomedicine. Shifting landscape of dengue infections. Asian Biomed 2013;7:461-2.
2. Nga L. Number of dengue fever cases in Hanoi triples. Hanoi: VN Express International; 2024.
3. Singh A, Taylor-Robinson AW. Vector control interventions to prevent dengue: current situation and strategies for future improvements to management of *Aedes* in India. J Emerg Infect Dis 2017;2:123.
4. Department of Preventive Medicine, Ministry of Health, Vietnam Government. Inspection of dengue fever prevention work in Hanoi. Hanoi: Department of Preventive Medicine, Ministry of Health, Vietnam Government; 2023.