https://doi.org/10.18502/jad.v20i1.21971

Letter to the Editor

Dengue Fever and the FIFA World Cup 2026: Time for Action

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(Received 28 Feb 2026; accepted 28 Mar 2026)

Dear Editor

The highly anticipated "Fédération Internationale de Football Association (FIFA) World Cup 2026" is set to kick off on June 11 and conclude on July 19, 2026. This prestigious tournament will be jointly hosted by three countries: the United States, Mexico and Canada. As millions of fans from around the globe flock to the host nations to experience the excitement of the matches in person, it is important to consider the heightened risk of infectious diseases during such large-scale events (1). One notable concern is the transmission of *Aedes*-borne pathogens, including dengue fever, chikungunya, yellow fever, Zika virus, and West Nile virus. Past events, such as the Rio 2016 Olympics in Brazil, have illustrated the potential risks, as the Zika virus, carried by *Aedes aegypti* and *Ae. albopictus* mosquitoes posed significant challenges despite their relatively low incidence at the time (2). Given the widespread nature of dengue fever, which is now endemic in over 100 countries and leads to an estimated 390 million new infections annually (3), the FIFA World Cup 2026 requires particular scrutiny in this regard. This letter aims to highlight the potential risks of dengue fever's global spread during such major international events and underscores the importance of comprehensive public health measures.

According to a report from the Centers for Disease Control and Prevention (CDC), dengue fever cases have been reported across all 49 continental U.S. states. Most of these cases occur in travelers who were infected in other countries. However, local transmission of dengue fever has occasionally been documented in the continental US, particularly in Florida, Texas, Hawaii, Arizona and California (4). The mosquitoes that can spread dengue fever, *Ae. aegypti* and *Ae. albopictus*, are found in certain regions of the US (4). Reports indicate that dengue fever cases in the Americas increased dramatically, rising from 4.6 million in 2023 to 13 million in 2024. In the US, there were 7,528 confirmed or probable travel-associated dengue fever cases reported from 2010 to 2021 (5). Although the overall incidence of dengue fever in US states has been generally low, there have been spikes in recent years, particularly between 2013 and 2016, with a peak in 2019. Most of these cases have been linked to travel (6).

Mexico is one of the key regions in the world affected by dengue fever (7), with the primary vectors responsible for transmitting the disease present in the country (8). Over the past 40 years, there has been a significant long-term increase in dengue fever cases, with an estimated total of 1,715,456 cases reported (7). The incidence of the disease varies, with periodic outbreaks occurring particularly in southeastern states, along the Pacific coast and in the Gulf of Mexico. Despite the mandatory nature of dengue fever surveillance in Mexico,

http://jad.tums.ac.ir
Published Online: March 31, 2026

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the country's passive surveillance system has encountered several challenges. The number of reported cases of dengue fever has increased over time due to factors such as underreporting, misdiagnosis and changes in reporting practices (9). Currently, dengue fever has been reported in 32 states across Mexico, indicating that the disease is widespread and not evenly distributed throughout the country (7).

According to the Public Health Agency of Canada, approximately 200 to 300 cases of imported dengue fever are diagnosed in Canada each year. All of these cases occur among travelers returning from countries where the disease is endemic (10). Although dengue fever is not considered endemic in Canada, imported cases are frequently reported due to international travel. Furthermore, the mosquitoes responsible for transmitting dengue fever have been detected in Canada (11).

The hosts for the FIFA World Cup 2026 are shown in Fig. 1 (A), alongside the geographical distribution of dengue fever cases in the United States (B) and Mexico (C). This map highlights the risk of dengue fever in two of the three host countries for the 2026 World Cup and indicates a persistent risk of dengue fever in those regions. Among the three host countries, Mexico is identified as having a high risk of dengue fever, based on long-term endemicity and transmission intensity.

Based on the WHO recommendations for mass gatherings, it is important to establish a flexible control structure to coordinate with all stakeholders (health, security, event organizers, emergency services). A comprehensive and continuous risk assessment for dengue fever must be performed. A disease surveillance system with rapid response capabilities should be implemented for early detection of outbreaks. Preventive and infection control measures against potential dengue infection are necessary. Intersectoral and international collaboration, utilizing the experiences and capacities of other countries, should be employed (12).

The presence of dengue fever vectors in the countries hosting the FIFA World Cup 2026 raises significant concerns. With many international travelers expected to attend the event, individuals from dengue-endemic regions may bring the infection to the host countries. Additionally, there is a possibility of transmitting the virus from endemic areas within the host countries to travelers and spectators arriving from other parts of the world. Therefore, it is crucial to consider local transmission, identify hotspots for transmission, anticipate potential outbreaks, assess the seasonal risks of dengue fever, and prepare for effective disease control in these nations. Collaboration among health authorities and tournament organizers is vital for addressing and mitigating any public health challenges associated with dengue fever during the FIFA World Cup 2026. Travelers attending the tournament are advised to use insect repellents such as DEET and Picaridin. It's also important to take personal precautions by wearing light-colored clothing, long pants and long-sleeved shirts whenever possible. Host countries should implement environmental management measures (for example, removal of breeding sites, improved waste management, targeted larval control) in areas infested with mosquito vectors. It is also recommended to establish public health measures to minimize the risk of dengue fever during the tournament. These measures should include pre-travel education, active surveillance and providing destination information about dengue fever during the games. The possibility of dengue fever transmission during the FIFA World Cup 2026 highlights the critical need for enhanced surveillance, collaborative efforts across borders, and improved public health readiness. Failing to implement these measures could lead to a higher risk of localized outbreaks and potentially broader spread. Although this article is primarily about dengue fever, it's important to also consider other diseases transmitted by *Aedes* mosquitoes, like chikungunya and Zika, especially during the tournament.

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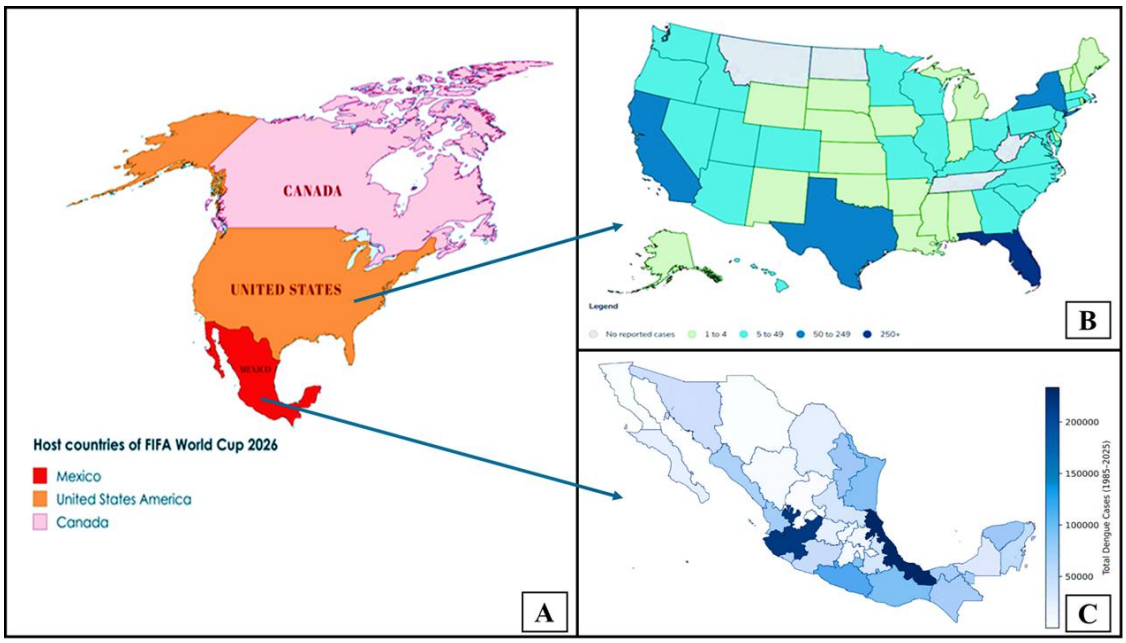


Fig. 1. Hosts of the Fédération Internationale de Football Association (FIFA) World Cup 2026 (A), the geographic distribution of dengue cases in the United States (B) (adapted from CDC (13)) and Mexico (C) (adapted from Briseno-Ramirez et al. 2025 (7))

CRediT authorship contribution statement

IA: Writing, original draft, Visualization, and Data curation. MMS: Writing, review and editing, Conceptualization, and Supervision.

Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Generative AI statement

During the preparation of this work, the authors used Grammarly AI in order to improve the readability and language of the work. After using this tool/service, the authors reviewed and edited the content as needed and take full responsibility for the content of the publication.

Conflict of interest statement

The authors declare that there are no conflicts of interest.

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Published Online: March 31, 2026

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