

## Editorial

# Dengue Overview- A Burden Now a Days in Bangladesh

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Dengue fever is an infectious disease spread by the bite of an infected *Aedes* mosquito and is caused by one of four antigenically different serotypes of the dengue virus (DENV 1-4).<sup>1</sup>

It can be found in both urban and semi-urban settings across the tropics and sub-tropics, and more than half of the world's population is in danger of dengue fever. Moreover, there are over 400 million documented cases and 22000 deaths of dengue virus infection every year.<sup>2,3,4,5</sup>

Dengue fever outbreak management is challenging in tropical regions, where year-round warm temperatures make it possible for mosquitoes to reproduce and the virus to replicate. In addition, large-scale dengue outbreak control is resource-exhaustive, necessitating the procurement of insecticides to reduce mosquito populations and deployment of substantial medical personnel to care for those who become ill.<sup>6</sup> Because of its proximity to the equator and its subtropical/tropical climate, Bangladesh, like other Southeast Asian (SE) countries, has become an ideal environment for the dengue vector and the subsequent increase in dengue transmission.<sup>7</sup>

According to the findings of the Bangladesh National Health Accounts (BNHA-V) study, the dengue situation in Bangladesh is causing an economic burden in our health sector, just as it is in other lower and middle-income countries.<sup>8</sup>

The primary vectors that transmit the disease are *Aedes aegypti* mosquitoes and, to a lesser extent, *Aedes albopictus*. Dengue virus (DENV) has four serotypes (DENV-1, DENV-2, DENV-3, DENV-4). Infection with one serotype provides long-term immunity to the homologous serotype but not to the other serotypes; sequential infections with a different serotype put people at greater risk for severe dengue. Many DENV infections produce only mild flu-like illness and over 80% of cases are asymptomatic. There is no specific treatment for

dengue; however, the timely detection of cases, identifying any warning signs of severe dengue infection, and appropriate case management are key elements of care to lower case fatality rates to less than 1%. Dengue was first recorded in the 1960s in Bangladesh (then known as East Pakistan) and was known as "Dacca fever". Since 2010 cases of dengue appear to coincide with the rainy season from May to September and during higher temperatures. Bangladesh's climate conditions are becoming more favorable for the transmission of dengue and other vector-borne diseases including malaria and chikungunya virus due to excessive rainfall, waterlogging, flooding, rise in temperature and the unusual shifts in the country's traditional seasons. From January to November 2023, the Health Emergency Operation Centre & Control Room, MIS, DGHS, Mohakhali, Dhaka reported a total of 3,17,645 affected dengue cases and total 1665 deaths including both male & female.<sup>9</sup> Although dengue is endemic in Bangladesh, the current dengue surge is unusual in terms of seasonality and the early sharp increase in comparison to previous years, where the surge started around -late June. The CFR so far this year is relatively high compared to previous years for the full-year period. The pre monsoon *Aedes* survey shows that the density of mosquitoes, and the number of potential hotspots is at the highest level in the past five years.<sup>10</sup>

During the monsoon season, Dengue fever spreads rapidly in Bangladesh. In 2022, however, after COVID-19, its virulence poses a severe danger to national economies around the country. Raising public consciousness is crucial in reducing the risk of this fatal disease. The government of Bangladesh is also responsible for educating the public, running campaigns, and taking appropriate measures to mitigate the impact of the disease.

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**References:**

1. Guzman MG, Harris E. Dengue. *The Lancet*. 2015;385(9966):453-465. 10.1016/S0140-6736(14)60572-9 [PubMed]
2. Bhatt S, Gething PW, Brady OJ, et al. The global distribution and burden of dengue. *Nature*. 2013;496(7446):504-507. 10.1038/nature12060 [PMC free article]
3. Shepard DS, Undurraga EA, Halasa YA, Stanaway JD. The global economic burden of dengue: a systematic analysis. *Lancet Infect Dis*. 2016;16(8):935-941. 10.1016/s 1473-3099(16)00146-8
4. Li Z, Dong J. Big geospatial data and data-driven methods for urban dengue risk forecasting: a review. *Remote Sens*. 2022;14(19):5052. [Google Scholar]
5. Roy SK, Bhattacharjee S. Dengue virus: epidemiology, biology, and disease aetiology. *Can J Microbiol*. 2021;67(10):687-702. 10.1139/cjm-2020-0572
6. Haider N, Chang Y-M, Rahman M, Zumla A, Kock RA. Dengue outbreaks in Bangladesh: historic epidemic patterns suggest earlier mosquito control intervention in the transmission season could reduce the monthly growth factor and extent of epidemics. *Curr Res Parasitol Vector-Borne Dis*. 2021;1:100063.
7. Mutsuddy P, Tahmina Jhora S, Shamsuz-zaman AKM, Kaiser SMG, Khan MNA. Dengue situation in Bangladesh: an epidemiological shift in terms of morbidity and mortality. *Can J Infect Dis Med Microbiol*. 2019;2019:1-12.
8. Mustafa A, Rahman A, Hossain N, Begum T. Bangladesh National Health Accounts 1997-2015 (BNHA-V). 2018.
9. Health Emergency Operation Centre & Control Room, MIS, DGHS, Mohakhali, Dhaka
10. <https://www.who.int/emergencies/disease-outbreak-news/item/2023-DON481>