

Current Dengue Situation in Bangladesh: Heading from Backstreet to Highway

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Published Date: 28 Sep 2023
DOI: <https://doi.org/10.3329/jrpmc.v8i2.69305>

Dengue is endemic in Bangladesh with recurrent outbreaks and is one of the major public health concerns in Bangladesh. Dengue virus has the potential to cause epidemics resulting in high morbidity and mortality. The dengue outbreak in Bangladesh has taken a worrisome turn as the number of cases and fatalities continue to rise, signaling an alarming trend this year. The total number of fatalities from this mosquito-borne disease in Bangladesh is 05 times higher compared to 2022. According to the media, dengue has already spread in 63 districts of the country. Public health experts believe that the dengue situation is getting complicated and due to the continuous deterioration of the situation, there is a risk of dengue affecting a large number of people this year.¹

In this ongoing 2023 dengue epidemic season, the country has been facing the deadliest outbreak of Dengue fever ever since the first outbreak in Bangladesh in 2000.² As of 17 September 2023, the Directorate General of Health Services (DGHS) has reported 167,684 hospitalizations and 822 deaths.³ From 1 January to 7 August 2023, the Ministry of Health and Family Welfare of Bangladesh reported a total of 69 483 laboratory-confirmed dengue cases and 327 related deaths, with a case fatality rate (CFR) of 0.47%. Of these, 63% of cases and 62% of the deaths were reported in the month of July 2023.³ 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.⁴ The higher incidence of dengue is taking place in the context of an unusual episodic amount of rainfall, combined with high temperature and high humidity, which have resulted in an increased mosquito population throughout Bangladesh.

In 1960 Dengue was first recorded in Bangladesh and was termed as “Dacca fever”. Dengue virus (DENV) has four serotypes such as DENV-1, DENV-2, DENV-3, and DENV-4. Infection with one serotype provides long-term immunity to the same serotype but not to other serotypes. Subsequent infections with another serotype threaten a risk for severe dengue. DENV2 was the predominant circulating serotype in Bangladesh until 2018, when it was replaced by DENV3 as the predominant serotype since 2019.⁵ However, DENV2 has been identified as the primary circulating serotype in this outbreak, and this may result in more severe dengue infections and hospitalizations as a result of a second infection with a heterologous serotype. Of the 66 serotyped samples in the month of June 2023, DENV2 (51.5%) and DENV3 (43.9%) were identified as the circulating serotypes.⁶

The dengue risk at the national level is assessed as ‘High’ due to the ongoing rapidly increasing number of cases and deaths with the peak not yet reached, the high CFR compared to the previous years and the increasing geographical distribution of cases. In addition, DENV2 has been identified as the predominant circulating serotype, following four years of DENV3 predominating which may result in higher numbers of severe cases as a result of a second infection with a heterologous serotype. The prevention and control of the DENV, virus that causes dengue, depends on effective vector control. WHO promotes a strategic approach known as Integrated Vector Management (IVM) to

control mosquito vectors, including *Aedes* species, the vector of dengue. IVM should be enhanced to remove potential breeding sites, reduce vector populations, and minimize individual exposure. Personal protective measures during outdoor activities include the topical application of repellents to exposed skin or treatment of clothing, and the use of long sleeves shirts and pants. Additionally, in indoors protection can include the use of household insecticide aerosol products, or mosquito coils during the day. Window and door screens, as well as air conditioning can reduce the probability of mosquitoes entering the house. Insecticide-treated nets offer good protection to people against mosquito bites while sleeping. Since *Aedes* mosquitoes are active at dawn and dusk, personal protective measures should be used at these times of the day.⁷

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%. There is no specific treatment for cases and clinical management is based on supportive therapy only. Rapid detection of severe dengue cases and timely referrals to tertiary hospitals can reduce mortality. Case surveillance should continue to be enhanced in all affected areas and across the country. Where feasible, resources should be allocated for the strengthening of a sample referral mechanism for the confirmation and sub-typing of dengue virus.⁸ Raising public awareness is crucial in reducing the mortality of this fatal disease. The Government of Bangladesh along with its responsible bodies are working continuously for educating the public, running campaigns, and taking time demanding decisions to mitigate the impact of the disease. No

epidemic is not an end of the world. It is an end of the bad experience of humans. We have a chance to do something extraordinary.

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