

# Dengue Fever Outbreak 2023, Bangladesh

This year, Bangladesh is witnessing its most extensive and deadliest Dengue fever outbreak in the past twenty-two years. The number of the reported hospitalized cases of Dengue patients was 271175 up to 31<sup>th</sup> October, 2023. The number is already more than 2.6 times higher than the earlier highest record of 101300 during the entire year of 2019. The death rate among Dengue patients in hospitals has become extremely concerning. In the last 22 years, there were a total of 837 deaths, but by October this year, the number of fatalities has already exceeded 1348. During the previous largest outbreak in 2019, mortality rate was 0.16% but this year up to October rate was 0.5%<sup>1,2</sup>.

The Dengue fever outbreak in 2023 differs significantly from previous outbreaks. Unlike the typical presentation, which includes high fever, severe headache, retro-orbital eye pain, muscle and joint pains, nausea, vomiting, and rash<sup>3,4</sup>, many patients this year presented with low-grade fever or no fever, along with symptoms such as cold, sore throat, diarrhea, persistent vomiting, abdominal pain, ascites, pleural effusion, and even shock. Shock was observed in many patients after only two to three days of low-grade fever<sup>5</sup>.

The unusual increase in Dengue activity began earlier than usual this year. For the first time, Dengue has affected all 64 districts of Bangladesh, and the number of cases outside Dhaka city has exceeded those within Dhaka city, indicating a nationwide spread of the virus. The high case fatality rate (CFR) observed this year also has unique characteristics. The CFR is higher in Dhaka city (0.8%) than outside Dhaka city (0.2%), despite having more hospitals and health facilities<sup>2</sup>. Unfortunately, although fewer females are admitted to hospitals, their CFR is higher<sup>6</sup>.

In contrast to previous observations, Dengue is no longer a disease primarily affecting the urban, affluent society, as this year it is affecting more people from poor households and outside Dhaka<sup>7</sup>. The Dengue

serotype survey also revealed changing trends. Up until 2018, the most prevalent serotype was DEN-2, which was replaced by the DEN-3 serotype from 2019 to 2022. However, this year, the most prevalent serotype was once again found to be DEN-2 [51.5%]. This shift in serotype is likely to result in more fatal cases due to cross-reaction with antibodies to DEN-3, which are present in people infected from 2019 to 2022<sup>8,9</sup>.

The unusual surge of dengue cases starting earlier this year poses a new threat to the ongoing development of this country. Bangladesh began its battle against dengue with shortages of test kits, medical professionals, hospital facilities, and infusions. There was a lack of vector control measures and awareness among the general population. Gradually, the healthcare system adapted by mobilizing healthcare professionals to the most affected areas, designating some hospitals as Dengue-dedicated facilities, importing test kits and infusions, and allocating more resources to vector control and awareness-building.

The BCPS journal is set to publish a special issue entirely dedicated to articles on dengue virus infection. This is likely the first journal of its kind. In addition to treating patients, doctors are systematically generating data that will aid in drawing conclusions regarding various management issues. The editorial board of BCPS has taken the responsibility to publish and disseminate this information in this dedicated Dengue issue.

To combat Dengue fever, Bangladesh developed the first edition of a national guideline for the clinical management of Dengue syndrome during the very first outbreak in 2000. Professor Md. Ridwanur Rahman, a prominent figure and Professor of Medicine, was one of the core editors of this guideline. Professor Ridwan passed away on October 25, 2023. The editorial team deeply mourns the sudden loss of this exceptional clinician and researcher. We also acknowledge his

significant contribution and dedication in the fight against Dengue viral disease.

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