



## Alarming Turn of Dengue Fever in Dhaka City in 2019

Arifa Akram

Medical Officer, Department of Virology, Institute of Epidemiology, Disease Control and Research (IEDCR), Dhaka, Bangladesh;  
Email: [drbarna43@gmail.com](mailto:drbarna43@gmail.com); Cell no.: +8801816296249

Dengue fever has re-emerged as a major public health challenge worldwide, with 2.5 billion people at risk of infection, more than 100 million cases and 25000 deaths being reported annually<sup>1</sup>. The dengue circumstances in Bangladesh is getting worse this year (2019) as the number of infected people has more than doubled since last month, compared with the same period last year<sup>2</sup>.

According to a report of Directorate General of Health Services of Ministry of Health & Family Welfare, Dhaka, Bangladesh, 16223 people were infected with dengue in July and 9006 more till 6th August (Figure I) and 18 of them died<sup>3</sup>. A total of 10,148 people were infected with dengue last year and 26 of them died<sup>2</sup>.

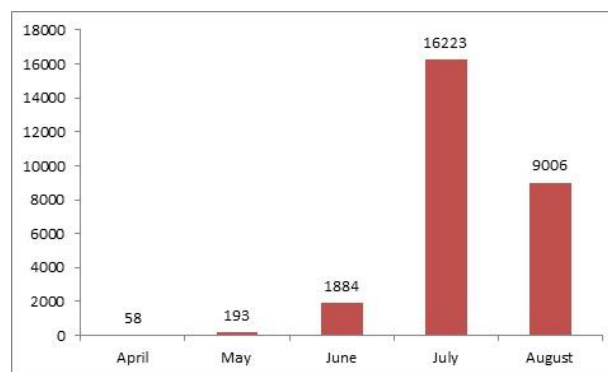
**Table 1: Dengue serotypes Status in Different Years<sup>4</sup>**

Year	Dengue serotypes Status
2013 to 2016	DEN2 (predominant) followed by DEN1
2017	DEN 2 (predominant) followed by DEN1 and co detection of DEN 3 with DEN 2 (few cases)
2018	DEN 2 (predominant) followed by DEN2 and DEN1 and co-detection DEN2 & DEN3 and DEN1 & DEN3(few cases)
2019	DEN 3 (predominant) followed by co-detection of DEN2 & DEN3 and DEN1 & DEN3 (few cases)

Till now, dengue infections are believed to be caused by four antigenically distinct serotypes Dengue Virus DENV-1, DENV-2, DENV-3, and DENV-4; each generating a unique host immune

response to the infection. These four serotypes are genetically similar and share approximately 65.0% of their genomes. The fifth variant DENV-5 has been isolated in October 2013<sup>1</sup>. Infection with one of the serotypes confers serotype-specific lifelong immunity; however, secondary infection with a heterogonous serotype often creates devastating outcomes, which may be due to antibody-dependent enhancement<sup>6</sup>.

Since 2000, Bangladesh has experienced dengue fever in every year. All four serotypes have been detected, with DENV-3 predominance until 2002. After that, during the years 2013 to 2016 a recent report showed that DENV-1 and DENV-2 are circulating serotypes in 3 major cities in Bangladesh, including Dhaka<sup>5</sup>. DENV-1 and DENV-2 are in circulation for more than a decade, thus, a large portion of the country's population might be immune to serotypes DENV-1, DENV-2 or both; however, they are at risk of developing severe dengue infection by DENV-3 or DENV-4. Thus, the high frequency of severe dengue cases in 2018 and 2019 correlates with the prevalence of serotype DENV-3<sup>6</sup>.



**Figure I: Number of Affected people in 2019**

Most of the people who have been died due to dengue this year have been suffered from Dengue shock syndrome (DSS) and are infected in second-time<sup>7</sup>. Dengue shock syndrome (DSS) is a dangerous complication from dengue which is often caused by a secondary infection with a different virus serotypes.

Experts have stated that effects of climate change, intermittent rain, pattern of weather and lack of cleanliness are the main reasons for this increase in dengue cases<sup>2</sup>.

**Table 2: Year Wise Dengue Cases and Deaths in Bangladesh<sup>4</sup>**

Year	No of Affected people	Death
2000	5551	93
2001	2430	44
2002	6282	58
2003	486	10
2004	3934	11
2005	1048	4
2006	2200	11
2007	466	0
2008	1153	0
2009	474	0
2010	409	0
2011	1359	6
2012	671	1
2013	1749	2
2014	375	0
2015	3162	6
2016	6060	14
2017	2769	8
2018	10148	26
2019(Upto 6 <sup>th</sup> August)	16223	18

Directorate General of Health Services of Ministry of Health & Family Welfare, Dhaka, Bangladesh conducted a survey and found the high presence of

*Aedes* mosquito in the capital. The survey has been found high level of larvae of *Aedes* mosquito in water collected from abandoned tyres, plastic drums, buckets, open tanks in under-construction buildings and flower tubs<sup>2</sup>.

Although having 19 years' knowledge of dengue management, the unfortunately large number of deaths indicates that urgent awareness is required to strengthen the early detection of dengue at all healthcare facilities. Except it, public health management like a vector control programme, awareness regarding prevention and regular surveillance are very important.

## References

1. Mustafa MS, Rasotgi V, Jain S, Gupta V. Discovery of fifth serotype of dengue virus (DENV-5): A new public health dilemma in dengue control. *Medical Journal Armed Forces India* 2015;71(1):67-70.
2. The daily star. Dengue situation in Bangladesh takes alarming turn. Available at: <https://www.thedailystar.net/backpage/news/dengue-situation-in-bangladesh-takes-alarming-turn-1761832?> Accessed on July 17, 2019
3. Dengue, control room dengue dashboard. Available at: [http://103.247.238.81/webportal/pages/controlroom\\_dengue\\_dashboard.php](http://103.247.238.81/webportal/pages/controlroom_dengue_dashboard.php) Accessed on August 06, 2019
4. IEDCR. Dengue situation update, 05082019. Available at: <https://www.iedcr.gov.bd/> Accessed on: August 05, 2019.
5. Muraduzzaman AK, Alam AN, Sultana S, Siddiqua M, Khan MH, Akram A, et al. Circulating dengue virus serotypes in Bangladesh from 2013 to 2016. *Virus disease* 2018;29(3):303-7
6. Shirin T, Muraduzzaman AK, Alam AN, Sultana S, Siddiqua M, Khan MH, et al. Largest dengue outbreak of the decade with high fatality may be due to reemergence of DEN-3 serotype in Dhaka, Bangladesh, necessitating immediate public health attention. *New microbes and new infections*. 2019;29:100511
7. The daily star. Dengue deaths so far: most were infected a second time. Available at: <https://www.thedailystar.net/frontpage/max-people-died-dengue-fever-in-bangladesh-infected-for-second-time-1782226> Accessed on August 06, 2019

[*Bangladesh Journal of Infectious Diseases June 2019;6(1):1-2*]

**Cite this article as:** Akram A. Alarming Turn of Dengue Fever in Dhaka City in 2019. *Bangladesh J Infect Dis* 2019;6(1):1-2