

VOL. 9, NO. 1

2022

ISSN: 2382-5499 (Print)

eISSN: 2661-6076 (Online)

TRIBHUVAN UNIVERSITY JOURNAL OF
MICROBIOLOGY

Tribhuvan University
Journal of Microbiology



Central Department of Microbiology

Tribhuvan University, Kirtipur, Kathmandu, Nepal

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EDITORIAL

Massive Dengue Outbreak in Nepal- What Next?

Dengue, a mosquito borne viral disease, has shown a global increase not only by magnitude (0.5 million in 2000 to 4.2 million in 2019) but also by the geographical scope, with an expansion to regions and countries previously thought to be non-endemic. South Asia is no exception to this with the evidence of virus spread to Bhutan and Nepal in the last decade.

After the first dengue outbreak reported in 2006, there have been a series of dengue outbreaks that ranged from small clusters to large epidemics which had a loose cyclical trend of 2-3 years interval. Surprisingly, in 2019, Over 17000 dengue cases reported, which cases declined during the COVID-19 pandemic until an unprecedented disaster occurred in 2022 with record high number of cases and deaths. According to the Epidemiology and Disease Control Division (EDCD) data, 54,784 dengue cases and 88 deaths were reported from all 77 districts of Nepal. This remained an overwhelming burden to a country with less than 30 million population despite the efforts made by EDCD for the epidemic control. Preventing such a large scale epidemic requires joint efforts from different sectors and should not merely limited to clinical management and vector control by 'search and destroy' campaigns. Outbreak preparedness plans developed well ahead of the mosquito breeding season and its efficient execution is necessary before the exponential increase in actual number of dengue cases.

Data from the past 15 years clearly demonstrate that dengue has substantially expanded to higher altitudes in Nepal although the reasons are not very clear. More data is needed to link it with current outstanding issues like climate change, and vector adaptation, and their roles in dengue transmission dynamics in Nepal.

Dengue has firmly established in Nepal, and perhaps the existing cyclical trend will not continue for long. Now onwards, large outbreaks may appear every year as there is still a significant proportion of population naive to one or more of the four dengue virus serotypes. While Kathmandu was among the hardhit areas in 2022, similar large outbreaks may appear in other parts of the country in the years to come.

Therefore, the country needs to be prepared for any unprecedented outbreak in the future. Furthermore, understanding the precise epidemiology is of paramount importance, which requires virus surveillance in mosquitoes and adequate sequencing of circulating virus strains both from human and mosquito. For this, scaling up of public health laboratories, strengthening research capacity in universities and a sustainable collaboration between university and health care service provider would help achieve the goals.

Komal Raj Rijal

Chief Editor

Shyam Prakash Durme*

Editor

*E-mail: sp.dumre@gmail.com