

Global warming and longer monsoon rains make dengue deadlier in South Asia

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Dengue-infected children in a hospital in Dhaka [Mohammad Ponir Hossain/Reuters]

Dhaka, September 11 (RHC)-- Mosquito-borne dengue fever is taking a heavy toll on South Asian nations this year as Bangladesh grapples with record deaths and Nepal faces cases in new areas, with disease experts linking worsening outbreaks to the impacts of climate change.

Authorities in the two countries are scrambling to contain and treat the disease – which is also known as “breakbone fever” for the severe muscle and joint pains it induces. Entomologists and epidemiologists say rising temperatures and longer monsoon seasons are providing ideal breeding conditions for mosquitoes.

The threat is not restricted to South Asia as dengue rates are rising globally with 4.2 million cases reported in 2022 – up eightfold from 2000 – the World Health Organization (WHO) says. Earlier this year, WHO said dengue is the fastest-spreading tropical disease worldwide and represents a “pandemic threat”.

In Bangladesh, at least 691 people have died so far in 2023, and more than 138,000 have been infected, official figures show, making this the deadliest year since the first recorded epidemic in 2000. The previous record toll was 281 deaths last year.

A lack of proper prevention measures has allowed the dengue-carrying *Aedes aegypti* mosquito to spread across almost all of Bangladesh, said Kabirul Bashar, an entomologist and zoology professor at Jahangirnagar University in the capital Dhaka.

He said this raised the risk of more infections occurring during September. Dengue is common during the June-to-September monsoon season when mosquitoes thrive in stagnant water.

“This climate is favourable for the breeding of *Aedes* mosquitoes,” Bashar said in an interview. “Dengue is not only a problem for Dhaka, it is now a problem for the entire country.”

Meanwhile, Nepal – which first recorded dengue in 2004 – has had at least 13 dengue deaths and more than 21,200 cases so far this year across 75 of its 77 districts, according to officials. This year could match the 2022 toll of 88 deaths and 54,000 cases, said Uttam Koirala, a senior public health officer at the national epidemiology and disease control division.

Meghnath Dhimal, a senior research officer at the Nepal Health Research Council (NHRC), said the incidence and spread of dengue had been rising quickly nationwide in recent years.

Rising temperatures mean cases have started occurring in colder autumn months, while Nepal’s higher mountain districts that never before had the disease are now struggling to curb its spread, he said, describing the shifting patterns as “strange”.

For example, the city of Dharan in the mountainous east has been hit particularly hard this year – with dengue cases rising so fast that hospitals and ambulances are overwhelmed by demand, according to Umesh Mehta, the local health division chief. The city of more than 160,000 people saw the number of dengue cases peak at 1,700 a day as of late August, he said.

Amrit Kumar Thakur, a Dharan resident, was one of four members of his family to contract dengue last month. The 27-year-old said the disease started with a mild body ache and got steadily worse before he was treated at a temporary health centre set up to deal with the fast-growing number of cases. “Dengue was the worst health experience of my life,” said Thakur, adding that he and his relatives had fully recovered.

WHO says dengue is rising partly because global warming benefits mosquitoes, along with other factors including movement of people and goods, urbanisation and problems with sanitation. In July, WHO said an unusual episodic amount of rainfall in Bangladesh, together with high temperatures and high humidity, had helped the mosquito population to grow across the nation.

Furthermore, Bangladesh has experienced longer-than-usual monsoon seasons in recent years, with erratic rainfall over the March-to-October period and more breeding grounds popping up for mosquitoes,

according to various disease and health experts. The number of potential breeding sites identified in 2023 is the highest in the last five years, said Nazmul Islam, director of the disease control branch of Bangladesh's health department.

Fiercer floods fuelled by heavy rains and melting glaciers – driven by climate change – are another major factor behind the spread of dengue, said Mohammad Mushtuq Husain, an advisor at the Institute of Epidemiology, Disease Control and Research. The Bangladeshi government has also cited climate change as a driver behind the country's worsening dengue outbreak.

Saber Hossain Chowdhury, the prime minister's special envoy on climate change, said last month on the messaging platform X, formerly known as Twitter, that the nation's record dengue cases are "a clear instance of [the] climate change health nexus".

Bangladesh needs to think about a national plan for adapting its health system to prevent diseases like dengue from turning into major disasters, Chowdhury said in an interview.

As dengue lacks a specific cure, health experts say the disease must be kept at bay through control of mosquito breeding, engaging with the public, and managing symptoms.

In Dhaka, officials are going around the city spraying insecticide to kill mosquitoes and imposing fines on people if breeding sites for the larvae are found. Atiqul Islam, mayor of the Dhaka North City Corporation, said the authorities would have to keep informing residents of the risks, and monitoring the situation, throughout the year.

"It's not the time for pinning blame, rather everyone should come forward to deal with the dengue situation – for their love of this city where we are born, live and die," said Islam.

In Nepal, Dhimal from the NHRC said no authority alone could stop dengue as mosquitoes are found everywhere from garages to the corners of houses which are out of reach of the government. "Everyone should be aware and proactive, and contribute from their side to control the spread of the vector," he added.

Civil society and development organisations are also helping to tackle the disease. Sanjeev Kafley, head of the Bangladesh delegation for the International Red Cross, said it was helping to raise public awareness, procuring testing kits, and boosting the availability of platelets used in blood transfusions to treat some patients.

Yet when it comes to treatment broadly, ordinary families face high costs. Researchers from Dhaka University's Institute of Health Economics have warned that total medical expenses for dengue patients may exceed 10 billion taka (\$91 million) this year, up from 4.5 billion taka (\$41 million) in 2019.

Dhaka resident Akhtar Hossain spent 60,000 taka (\$546) on private hospital care for his daughter, Ayesha Tabassum Taqwa, who ultimately died of dengue last month at the age of 10.

Hossain cried as he spoke of Taqwa's love of learning. "Her books, notebooks ... are all still on the reading table," he said, vowing not to touch them and rearrange the books as she left them.

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