



Dengue rises in Bangladesh

Dengue comes to Dhaka each year. But a combination of climate change, urbanisation, and a struggling health-care system have resulted in a spike in numbers. Sophie Cousins reports.

The monsoon rains arrive in Dhaka in June, and so does dengue. Just one of the mosquito-borne diseases prevalent in Bangladesh's capital, dengue usually proves fatal to just a few people every season; but, by September, dengue, along with the rains, has usually disappeared. However, 2018 saw an explosion of recorded dengue cases—more than triple the number of cases recorded in 2017—and a lengthening of its season.

9926 confirmed cases of dengue occurred in Bangladesh in 2018, an increase from 2769 in the previous year, according to data from the Institute of Epidemiology Disease Control and Research. There were 17 deaths, making it the deadliest year since the first recorded epidemic in 2000. Emranul Haq, consortium manager for urban health at Concern Worldwide (an Irish NGO based in Dhaka), however, fears that many more cases were not reported, and that the spike in cases, not only in Bangladesh but in other south and southeast Asian countries, including Myanmar, India, and Cambodia, will continue.

Climatic changes and unplanned rapid urbanisation are thought to have contributed to the increase of dengue cases in Dhaka. The city is one of the world's most densely populated with more than 20 million people, many of whom live in slums with a lack of sanitation. Moreover, rapid construction, poor urban planning, and a struggling health-care system are making the situation worse.

"The dengue season is getting really long. If you look at the hot spot areas, where the high numbers of cases and deaths are, you will see that it's shifted from not just extreme slum areas and very unhygienic canal areas but to richer areas", said Haq.

Haq also pointed to the construction boom in the capital as a major problem. Across the city, high-rise apartment blocks, hotels, and malls are being built, but with the hasty development have come barrels of stagnant water—perfect breeding grounds for the *Aedes aegypti* mosquito. "When you think about development, to bring sufficient housing to a huge number of people, you need a lot of buildings. But these are not being built in a planned manner."

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Rashidul Haque, senior scientist and head of enteric and respiratory infections at the International Centre for Diarrhoeal Disease Research, Bangladesh, agreed. "Urban planning has always been a problem for such a big city like Dhaka. [There are] scarce resources and a lack of cleaning of the places where mosquitoes breed such as drains and sewerage areas—any place where water can be logged", he said.

Haque said that, although insecticides were being used in Dhaka by city corporations, they were "not good enough" because the mosquitoes were resistant. "We have to test the insecticides for their effectiveness. That is not being done." Dengue is typically a self-limited disease that causes influenza-like symptoms. When detected early, and when access to proper medical care is available, it has a mortality rate of less than 1%. According to WHO, an estimated 500 000 people with severe dengue require treatment in hospital worldwide each year, with an estimated case fatality rate of 2.5%.

Bangladesh is considered to have a strong rural health-care system, which falls under the responsibility of the Ministry of Health, but city corporations are responsible for urban health care, which has been sorely neglected, in part because of the influx of people. This neglect has resulted in huge disparities between access to health care for the rich and poor. Those who can afford to seek care in the private sector do, and those who cannot must rely on overcrowded and understaffed public hospitals.

Haq said many poor patients were being forced to ignore classic dengue symptoms such as fever or to turn to quacks for care. "By the time people actually get to a health facility, it's too late. Chance of death is high and when your blood count has gone down and you need a blood donor, for the poor, this is a very difficult situation."

The rapid increase in dengue cases is not just confined to Bangladesh. Worldwide, the number of cases rose from 2.2 million in 2010, to 3.2 million in 2015. Asia is experiencing some of the worst impacts of climate change, along with rapid urbanisation, construction, and migration. As a result, it is being hit particularly hard by dengue.

Buddha Basnyat, infectious diseases expert and director at Oxford University Clinical Research Unit in Nepal, said he was worried that dengue cases in Kathmandu would rise, driven by migration to neighbouring Indian states. "As with so many things in medicine, it is hard to correctly predict how this dynamic will play out. But we should certainly try to be prepared for an outbreak."

The first dengue vaccine, CYD-TDV, was licensed in 2015, but it is not registered for use in Bangladesh.

Sophie Cousins