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## Unprecedented rise in dengue outbreaks in Bangladesh

Dengue is a common mosquito-borne infection that affects millions of people each year. 75% of the world's dengue burden is in Asia, particularly in countries such as the Philippines, Indonesia, and Thailand.<sup>1</sup> Bangladesh, in south Asia, has lower dengue seroprevalence than countries in southeast Asia,<sup>2</sup> but the situation is rapidly changing. We highlight the largest dengue outbreak in Bangladesh on record, which is taking place this year.

Bangladesh had sporadic transmission of dengue virus from 1964 to 1999, but the first outbreak due to dengue virus type 3 occurred in 2000,<sup>2</sup> with dengue outbreaks occurring at increasing frequency and magnitude since then, peaking with 10 148 cases in 2018.<sup>3</sup> In 2019, dengue outbreaks surpassed all previous records, mostly in the capital city of Dhaka. By August, 2019, a total of 70 188 dengue cases had been officially recorded, with 67 dengue-related deaths. The numbers increased to 81 832 cases with 67 deaths as of the last count on Sept 16, 2019 (figure). This high frequency of dengue cases is due to dengue virus type 3, but all other serotypes are co-circulating.<sup>4</sup>

What are the reasons for this unprecedented rise in dengue cases? Bangladesh has had an influx of Rohingya refugees from neighbouring Myanmar, which has led to a rise in many infectious diseases in

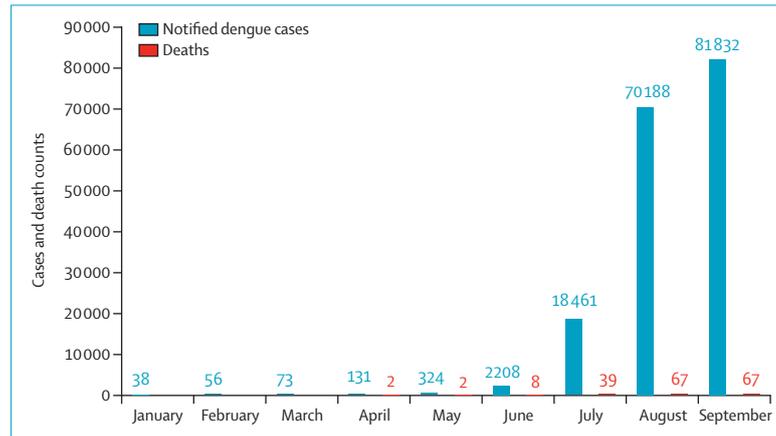


Figure: Dengue notifications and deaths in Bangladesh in 2019

Bangladesh, such as diphtheria.<sup>4</sup> However, reliable data supporting the importation of dengue via Rohingya refugees do not exist. Given the increasing connectivity of air travel,<sup>5</sup> it is more plausible that dengue outbreaks in Bangladesh are a result of dengue importation from southeast Asia, which is currently also witnessing an unusually elevated dengue prevalence. Climate change, unplanned rapid urbanisation and construction, high population densities, and the struggling health-care system in Bangladesh further compound the magnitude and severity of dengue outbreaks. Additionally, Bangladesh's insufficient preparedness, including inadequate public health infrastructure and suboptimal vector-control programmes, further magnifies the impact of dengue virus importation, resulting in epidemics of escalating severity.

Consequently, there is an urgent need to improve prevention and control strategies in Bangladesh. Communities need to be engaged in community-based measures to reduce mosquito breeding sites. Tools for early detection of dengue infection need to be provided to all health-care facilities, including diagnostic laboratory capability. Finally, clinicians in Bangladesh need to be trained in managing severe dengue to reduce fatality rates.

We declare no competing interests.

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## Dengue infection in Pakistan: not an isolated problem

Up until October, more than 19 000 cases of dengue infection and 30 deaths had been reported by the National Institute of Health, Pakistan,