The Emerging Zika Pandemic and Bangladesh

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Zika virus infection is a recent explosive pandemic occurring throughout South America, Central America, and the Caribbean.[1] It is potentially threatening the rest of the world, because there is no cure and no vaccination. World Health Organization (WHO) projected that the virus is likely to spread throughout most of the Americas by the end of the year.[2] It is a Public Health Emergency of International Concern.[3] Zika virus is a arbovirus (transmitted by arthropod) originated in the Zika forest in Uganda and was discovered incidentally in a rhesus monkey in 1947 through a monitoring network of sylvatic yellow fever.[4] It was subsequently identified in humans in 1952 in Uganda and the United Republic of Tanzania.[5] Since the 1950s, it has been known to occur within a narrow equatorial belt from Africa to Asia. The virus spread eastward across the Pacific Ocean between 2013 and 2014 to French Polynesia, New Caledonia, the Cook Islands, and Easter Island, and in 2015 to Mexico, Central America, the Caribbean, and South America, where the Zika outbreak has reached pandemic levels.[6]

The ongoing pandemic confirms that Zika is predominantly asymptomatic or causes mild illness like dengue (fever, rash, muscle/joint pain, and conjunctivitis), severe disease and fatalities are uncommon. However, the recent rise in the spread of Zika virus in Brazil has been accompanied by an unprecedented rise in the number of children being born with unusually small heads—identified as microcephaly. In addition, several countries, including Brazil, Yap and French Polynesia reported a steep increase in Guillain-Barré syndrome—a neurological disorder that could lead to paralysis and death. Evidence is growing that Zika virus causes both microcephaly and Guillain-Barré syndrome.[7]

The arboviruses, like Zika, dengue, chikungunya, yellow fever and West Nile, have been transmitted by Aedes mosquitoes, especially *A. aegypti*. These viruses started to emerge millennia ago, when North African villagers began to store water in their dwellings. Arboreal *A. aegypti* then adapted to deposit their eggs in domestic water-containing vessels and to feed on humans, which led to adaptation of arboreal viruses to infect humans. The dengue, chikungunya, yellow fever and West Nile viruses evolved entirely new maintenance cycles of human–*A. aegypti*–human transmission. Now, 5000 years later, the worst effects of this evolutionary cascade are being seen in the repeated emergence of arboviruses into new ecosystems involving humans.[1]

The Zika virus is of concern in the WHO South-East Asia Region as the Aedes aegypti, responsible for its spread, is found in many countries of this region. WHO also urged countries in the region to build capacity of their laboratories to detect the virus and strengthen surveillance for cases of fever and rash, neurological syndromes and birth defects while recommending intensifying vector control programme measures.[3]

Bangladesh does not have the Zika virus, but has the vector (Aedes Aegypti) of Zika, which is also responsible for the transmission of dengue, widely prevalent disease in Bangladesh. The first and large epidemic of dengue in 2000 was likely due to introduction of a dengue virus strain from a nearby endemic country, probably Thailand.[8] Wherever there is dengue, you are likely - in time - to get Zika too. It anticipates that Zika virus will continue to spread and will likely reach all countries and territories of the region where Aedes mosquitoes are found. There is a real chance Aedes aegypti will re-infect Asia with the virus. The World Health Organization (WHO) believes that the Zika virus is more common in Southeast Asia that the sprinkling of cases

reported in the region in the past several years. In India, Zika virus infection was identified in 1950s. Sporadic Zika virus cases were reported from Thailand, Maldives, Indonesia, Malaysia and Philipine in the recent past.[9] So definitely Bangladesh is at risk of Zika virus outbreak at any moment. Bangladesh's rapidly growing urban areas, tropical climate, and often poor waste management are factors that increase the risk of a Zika epidemic. Bangladesh is also susceptible to monsoon season that increase breeding sites for the *Aedes aegypti* mosquito. Countries like India, Thailand, Philipine, Singapore and Malaysia have stepped up a series of measures to curb the outbreak of an epidemic of Zika virus infection. Bangladesh should be prepared to address the risk of Zika virus out break and should build up facilities for managing the disease. To reach this goal adequate steps should be taken for early detection of the disease and to intensifying the vector control program. At the same time all the sectors of Bangladesh Health Services should be engaged to enhance public awareness in this regards.

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