Editorial

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Climate change and its impact on vector-borne diseases

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Climate change is one of the most critical global challenges of our times and its issue of concern for every global citizen. Many important public health challenges are attributed to climate change and rise of vector-borne diseases is one of them.^{1,2} The most deadly vector-borne disease, malaria, caused an estimated 660000 deaths in 2010. However, the world's fastest growing vector-borne disease is dengue, with a 30-fold increase in disease incidence over the last 50 years. Multiple factors have impact on transmission of vector-borne diseases, and causing their appearance in countries where they were previously unknown.³

In addition to the existing drivers of vector-borne diseases, such as seasonal weather variation, socioeconomic status, vector control programmes, environmental changes and drug resistance, climate change and variability are highly likely to influence current vector-borne disease epidemiology. The effects are likely to be expressed in many ways, from short-term epidemics to long-term gradual changes in disease trends.4 Many vulnerability assessments anticipate climate change will result in increased incidence of communicable diseases including vector-borne diseases.^[5] Current evidence suggests that inter-annual and inter-decadal climate variability have a direct influence on the epidemiology of vector-borne diseases. By 2100, it is estimated that average global temperatures will have risen by 1.0-3.5 degrees C, increasing the likelihood of many vector-borne diseases in new areas. The greatest effect of climate change on transmission is likely to be observed at the extremes of the range of temperatures at which transmission occurs.4

Global climate change can potentially increase the transmission of mosquito vector-borne diseases in many parts of the world. These predictions are based on the

effects of changing temperature, rainfall, and humidity on mosquito breeding and survival, the more rapid development of ingested pathogens in mosquitoes and the more frequent blood feeds at moderately higher ambient temperatures.⁶

To conclude, along with integrated vector control measures for tackling problem of vector-borne diseases it is essential to address issues related to climate change with utmost priority.

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