Dengue virus, a member of the Flaviviridae family, is a significant health threat globally, particularly in tropical and subtropical regions. Transmitted primarily by Aedes mosquitoes, notably Aedes aegypti and Aedes albopictus, the virus has become a major concern due to its widespread prevalence.

The virus exists in four distinct serotypes, and infection with one serotype does not confer immunity against the others. Dengue fever, the most common manifestation, presents with symptoms such as high fever, severe headaches, joint and muscle pain, rash, and mild bleeding. In severe cases, the infection can progress to dengue hemorrhagic fever (DHF) or dengue shock syndrome (DSS), both of which pose significant risks to life.

Dengue's impact is felt on a global scale, affecting over 390 million people annually in more than 100 countries. The Aedes mosquitoes, responsible for transmission, thrive in urban and semi-urban environments, breeding in containers that hold water.

Preventing dengue involves comprehensive efforts, including vector control measures to eliminate mosquito breeding sites, public awareness campaigns, and ongoing research into vaccine development. While there is no specific antiviral treatment for dengue, supportive care is crucial for managing symptoms.

The virus exhibits seasonal variation, often leading to outbreaks during and after the rainy season when mosquito populations surge. Diagnosing dengue can be challenging, given its similarity to other febrile illnesses. Laboratory tests, including molecular and serological assays, are employed for confirmation.

Efforts to combat dengue involve collaborative initiatives between international organizations, governments, and research institutions. These collaborations focus on surveillance, research, and the development of effective prevention and control strategies to mitigate the impact of the dengue virus on global health.