

Dengue in India: Critical Analysis
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What is Dengue?

Dengue is a viral disease. It is essentially, a **tropical** disease occurring in hot weather and intermittent rainfall conditions.

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Causes of Dengue disease?

- It is caused by **Aedes Aegypti mosquito and Aedes Albopictus (minor) mosquito**. It is a small, black mosquito with white stripes and is approximately 5 mm in size.
- The Aedes eggs remain **dormant for > 1 year** and will hatch once they come in contact with **water**.
- Aedes mosquitos cannot fly above 100 m and they bite **during the day** time. It is an **asymptomatic infection**.
- A person develops Dengue after 5-6 days of being bitten by an infective

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mosquito.

Types of Dengue

- It occurs in two forms: **Dengue Fever** and **Dengue Haemorrhagic Fever (DHF)**.
- Dengue Fever is a severe, flu-like illness.
- Dengue Haemorrhagic Fever (DHF) is a more severe form of disease, which may cause death.

Factors causing Dengue

- Urbanization, poor town planning and improper sanitation are the factors.
- Lack of coordination between local bodies and health departments.
- There is a deficiency of manpower and hence active surveillance is not possible according to National Vector Borne Disease Control Program.

Distribution of Dengue/ DHF in India

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- Disease is prevalent throughout India in most of the metropolitan cities and towns
- Outbreaks have also been reported from rural areas of Haryana, Maharashtra & Karnataka
- Deaths are more in children during DHF outbreak.

Various serotypes

- Dengue is caused by a virus of the Flaviviridae family and there are four distinct, but closely related, serotypes of the virus that cause dengue (DENV-1, DENV-2, DENV-3 and DENV-4).
- Recovery from infection is believed to provide lifelong immunity against that serotype.
- However, cross-immunity to the other serotypes after recovery is only partial and temporary.
- Subsequent infections (secondary infection) by other serotypes increase the risk of developing severe dengue.

Solutions for Dengue/ DHF

• Dengue Vaccine (Dengvaxia)

1. A vaccine to prevent dengue (**Dengvaxia®**) is licensed and available in some countries for people aged 9 to 45 years.
 2. The World Health Organization recommends that the vaccine only be given to persons with confirmed previous dengue virus infection.
 3. The vaccine manufacturer, **Sanofi Pasteur** announced in 2017 that people who receive the vaccine and have not been previously infected with a dengue virus may be at risk of developing severe dengue if they get dengue after being vaccinated.
- Keep the environment clean and the windows shut during day time.
 - Source reduction activities like preventing water stagnation and using chemical larvicides and adulticides can be taken periodically.
 - Use **Singapore model** which maps and analyses data on dengue using GIS.
 - Fluid Management is a solution for dengue haemorrhagic fever and dengue shock syndrome.
 - In the event of bleeding, WHO recommends fresh whole blood or packed cell transfusion to increase the platelet count.
 - Use of alternative medicines **Nilavembu kudineer (a Siddha medicine)** and **papaya leaf extract** and also **goat milk**. Also instead of distribution of Nilavembu Kudineer, the government can concentrate its energies on other public health activities.