



Approval of Dengue Vaccine by USFDA

Dengvaxia has been approved by the US Food & Drug Administration, the first dengue vaccine to get the regulatory nod in the US.

Need for Dengue Vaccine

- In India, until November 26, 2018, 89,974 dengue cases were reported, with 144 deaths. **India is among the dengue-endemic countries.**

About Dengvaxia

- Dengvaxia is basically a **live, attenuated dengue virus**.
- An **attenuated virus** is a virus that retains its properties of triggering an immune response in the body but its ability to lead to a disease is compromised.
- It has to be administered in people of ages 9 to 16 who have laboratory-confirmed previous dengue infection and who live in endemic areas.

What was Controversy About Dengvaxia?

- Ten deaths were reported in Philippines 2017 in the aftermath of a school vaccination campaign with Dengvaxia, due to **Plasma leakage syndrome**, in which blood vessels start to leak plasma. This brought the Philippines' immunisation drive to an abrupt halt.

What are the Constraints of Dengvaxia?

- Dengvaxia is a mixture of **four live attenuated dengue-yellow fever chimeric viruses**. The ideal scenario for a tetravalent vaccine – one with four antigens – is that the immune system recognises all four viruses and produces antibodies to all of them.
- But due to a phenomenon called **interference**, where one virus tends to replicate more at the expense of the others, the immune system responds to that virus and the vaccinated person ends up getting more immunity to that type of dengue.
- Due to this a physically tetravalent vaccine ends up being functionally monovalent and it gives only partial immunity.
- **For a short period of time**, though, this partial immunity can protect from all four types of dengue.
- Additionally, it is only applicable for certain age group.

Way Out

Dengue larvae control measure by the means of **Chemical Control, Bioinsecticides** (*Bacillus thuringiensis israelensis* (Bti), which is a naturally occurring soil bacterium that can effectively kill mosquito larvae present in water), **Biological Control of Dengue Mosquitoes** (through predatory crustaceans) should be focused upon.

