

Serum Institute ships first set of its malaria vaccine to Africa

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Why in News?

Pune-based Serum Institute of India (SII), announced on Monday that it has shipped its first batch of malaria vaccines— R21/Matrix-M— to Africa. Close to half-a-million children die of malaria each year in the African region, according to the [World Health Organisation \(WHO\)](#). In 2022, the WHO Africa region was home to 94% of malaria cases (233 million) and 95% (580,000) of malaria deaths. India had an estimated 3.38 million cases and 5,511 deaths.

What is Malaria?

• About

- Malaria is an acute febrile illness caused by Plasmodium parasites, which are spread to people through the bites of infected female Anopheles mosquitoes.
- It is a life-threatening disease primarily found in tropical countries.
- It is preventable and curable.

• Transmission of Malaria

- Malaria is not contagious and cannot spread from one person to another; the disease is transmitted through the bites of female Anopheles mosquitoes.

- **Five species of parasites** can cause malaria in humans and 2 of these species – Plasmodium falciparum and Plasmodium vivax – pose the greatest threat.

• Symptoms

- The first symptoms of malaria usually begin within 10–15 days after the bite from an infected mosquito.
- Fever, headache and chills are typically experienced, though these symptoms may be mild and difficult to recognize as malaria.

- In malaria endemic areas, people who have developed partial immunity may become infected but experience no symptoms.

- **Prevention**

- **Vector control interventions**

- Vector control is the main approach to prevent malaria and reduce transmission.
- Two forms of vector control are effective for people living in malaria-endemic countries:
 - insecticide-treated nets, and
 - indoor residual spraying, which is the application of an insecticide to surfaces where mosquitoes tend to rest.

- **Chemopreventive therapies and chemoprophylaxis**

- Although designed to treat patients already infected with malaria, some antimalarial medicines can also be used to prevent the disease.

What is R21/Matrix-M?

- **About**

- The R21 vaccine is the second **malaria vaccine** recommended by WHO, following the RTS,S/AS01 vaccine, which received a WHO recommendation in 2021.
- This vaccine has been developed by the University of Oxford and manufactured and scaled up by the Serum Institute of India (SII).
- The vaccine leverages **Novavax's adjuvant technology** and has met the required safety, quality and effectiveness standards.
 - Adjuvants are substances that enhance the immune system's response to a vaccine.
 - They are commonly used to improve the effectiveness of a vaccine.
 - In the vaccine, Matrix-M component is a proprietary saponin-based adjuvant developed by Novavax.

- **Key features**

- High efficacy when given just before the high transmission season
- Good efficacy when given in an age-based schedule
- High impact
 - Mathematical modelling estimates indicate the public health impact of the R21 vaccine is expected to be high in a wide range of malaria transmission settings, including low transmission settings.
- Cost effectiveness
 - At prices of US\$ 2 – US\$ 4 per dose, the cost-effectiveness of the R21 vaccine would be comparable with other recommended malaria interventions and other childhood vaccines.

First set of its malaria vaccine to Africa

- **Initial shipment to the Central African Republic (CAR) region**

- The initial shipment will be sent to CAR, followed by other African countries such as South Sudan and the Democratic Republic of Congo in the coming days.

- **Malaria vaccine is for the African continent**

- As per the SII, this is a malaria vaccine for the African continent and not for India as the parasite is found in Africa.
 - SII pointed out that the particular parasite (found in Africa) was not in India. Hence for India, it will take another five years for a malaria vaccine.
 - It should be noted that, no Malaria vaccine is currently being used in India under the national programme.
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Q.1. What is Adjuvant technology?

Adjuvant technology is a combination of immunostimulatory molecules that are added to vaccines to help the body's immune response. Adjuvants can be used in vaccines for many diseases, including tetanus, diphtheria, polio, pneumonia, and hepatitis.

Q.2. What is Serum Institute of India (SII)?

Serum Institute of India is ranked as India's No. 1 biotechnology company, manufacturing highly specialized life saving biologicals like vaccines using cutting edge genetic and cell based technologies, antisera and other medical specialties.

Source: [SII ships first set of malaria vaccine doses to Africa](#) | [WHO](#) | [Hindustan Times](#)

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