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R21/Matrix M

- A malaria vaccine candidate R21/Matrix M has shown promise in phase 2b clinical trials, with high efficacy at 77% - The first vaccine to reach WHO's goal of at least 75% efficacy.
- It is a modified version of RTS, S vaccine candidate against malaria. It has been developed at University of Oxford and produced in the Serum Institute of India.
- **Significance -** In 2019, India had an estimated 5.6 million cases of malaria compared to about 20 million cases in 2020 according to WHO.
- Globally, in 2019, there was 229 million cases of malaria and 409 000 malaria-related deaths in 87 countries.
- Between 2000 and 2020, 24 countries reported zero indigenous cases of malaria for 3 or more years - Benchmark for the World Health Organization (WHO) certification of a country as malaria-free.
- So, developing a vaccine with high efficacy was needed for a long time.
- **Previous version** - RTS, S candidate has been in development for more than 30 years. It is the first, and to date the only, vaccine to reduce malaria in children. But it has low efficacious.
- It is designed to stop the Plasmodium falciparum malaria parasite from entering the liver and preventing the subsequent deadly blood stages.
- It targets the liver stage protein of the P. falciparum life cycle.

Hike in Auto Fuel Prices

- State-owned Oil marketing companies (OMCs) hiked the price of petrol by 15 paise per litre and that of diesel by 18 paise per litre in the first hike in auto fuel pieces since February 27, 2021.
- Currently, petrol and diesel prices are at near record highs due to a combination of the increase in the price of crude oil and elevated taxes on petrol and diesel.
- In 2020, the central government had raised taxes on petrol and diesel to boost revenues as economic activity fell sharply due to the pandemic.
- **Significance** - OMCs would have to raise prices over the current crude oil price levels to boost marketing margins as refining margins were low due to the slow offtake of petroleum products due to Covid restrictions.

- OMCs could hike the price of petrol and diesel to recoup lost revenue during the price freeze.
- They were relying on inventory gains to boost their bottom line but as crude oil prices are not expected to rise much further, they will have to boost marketing margins as even refining margins are currently weak.
- [**Inventory gains** are gains in the value of crude oil as well as petroleum products held by an OMC.]

National Building Code

- Recent incidents of hospital fires have raised serious concerns.
- National Building Code (NBC) of India, published by the Bureau of Indian Standards, provides specifications and guidelines for design and materials that reduce the threat of destructive fires.
- Under the Code, all the existing and new buildings are classified by nature of use, such as residential, educational, institutional, assembly, business, mercantile, industrial, storage and hazardous.
- Hospitals come under the institutional category of the buildings.
- **Part 4** of the National Building Code deals with Fire and Life Safety.
    1. It covers the requirements for fire prevention, life safety in relation to fire and fire protection of buildings and the guidelines for fire drills and evacuations for high-rise buildings.
    2. It specifies occupancy-wise classification, constructional aspects, egress requirements and protection features that are necessary to minimise danger to life and property from fire.
    3. It specifies the demarcations of fire zones, restrictions on constructions of buildings in each fire zone, etc
    4. It classifies buildings based on occupancy, types of building construction according to fire resistance of the components and other restrictions and requirements necessary to minimise danger of life from fire, smoke or panic before the buildings are evacuated.

Other Provisions

- The Home Ministry's Directorate-General for Fire Services, Civil Defence & Home Guards says that the NBC is a "recommendatory document".
- The States have been asked to incorporate the Code into their building bylaws, making the recommendations a "mandatory requirement".
- The NBC recommends the location of buildings by type of use in specific zones to ensure that industrial and hazardous structures do not coexist with residential, institutional, office and business buildings.
- It specifies the technical requirements for special buildings, high rises,

educational and institutional buildings higher than 9 metres, and those with an area of over 300 square metres.
- It drills down into the specifics of fire resistance based on the materials used - walls, floor, roof, fire check doors, fire enclosure exits, etc.
- Technologies to sound alerts in case of a fire and also to fight it are expected to be incorporated into buildings.
- However, the NBC says that for various types of buildings, in case of practical difficulty or to avoid unnecessary hardship, without sacrificing reasonable safety, local head, fire services may consider exemptions.

Other Government Actions

- The Centre announced that a Fire Safety Committee will conduct periodical audits on fire installation, ventilation, electrical sub-stations and other electrical equipment in the Union government's hospitals.
- The Union Health Ministry circulated strict guidelines stipulating third-party accreditation for fire safety and that a fire response plan should be in place.
- National Disaster Management Authority has stipulated requirements for fire safety in public buildings, including hospitals, which incorporate elements of the NBC, besides design guidelines and evacuation drills.

Constitutionality of IPC's Section 124A

- The Supreme Court agrees to examine the constitutionality of the Indian Penal Code's (IPC's) Section 124A (the law against sedition).
- **Section 124A** defines sedition as an offence committed when a person by words or visible representation or otherwise, attempts to bring into hatred or contempt or to excite disaffection towards the government.
- Disaffection includes disloyalty and all feelings of enmity.
- Sedition is a non-bailable offence. Punishment ranges from imprisonment up to 3 years to a life term, to which fine may be added.
- A person charged under this law is barred from a government job. They have to live without their passport and must produce themselves in the court as and when required.
- **Kedarnath Singh Case 1962** - The SC upheld the constitutionality of the sedition law saying Article 19(2) that imposes reasonable restrictions on freedom of speech.
- However, it circumscribed the application of the law to Acts involving intention or tendency to create disorder, or disturbance of law and order, or incitement to violence.
- It specifically narrowed down its scope in order to protect dissent.
- It said the comments (even strongly worded) expressing disapprobation of the Government actions, without exciting the feelings which generate the

inclination to cause public disorder by violence wasn't sedition.

- **Current Situation** - The indiscriminate application of the law is perhaps why charges also don't seem to stick often.
- In Disha Ravi matter, the SC said that citizens can't be put behind the bars just because they disagree with the state policies. Sedition offence cannot be invoked to minister to the wounded vanity of the governments.
- To know more about the Sedition Law, click here.

Network for Greening the Financial System

- The Reserve Bank of India (RBI) has joined the Central Banks and Supervisors Network for Greening the Financial System (NGFS).
- It expects to benefit from the membership of NGFS by learning from and contributing to global efforts on Green Finance.
- The NGFS is a group of Central banks and supervisors willing to share the best practices and contribute to the development of the environment and climate risk management in the financial sector.
- It aims to mobilise mainstream finance to support the transition towards a sustainable economy.
- It aims to analyse the consequences of climate change for the financial system and to redirect global financial flows in order to enable low-carbon economic growth.
- The NGFS was launched at the Paris One Planet Summit in 2017.

Green Finance

- Green Finance has assumed significance in the context of climate change. It refers to financial support for green growth.
- It is a strategic approach to incorporate the financial sector in the transformation process towards low-carbon and resource-efficient economies, and in the context of adaptation to climate change.

SUTRA Model

- Scientists working on the SUTRA model have rejected media reports claiming that they had cautioned the Government regarding the second wave of the corona pandemic in March 2021.
- They said that the mathematical models used to forecast the surge of coronavirus cases couldn't predict the trajectory of the second wave as the virus dynamics and its transmissibility changed a lot over time.
- The government-backed **SUTRA** (Susceptible, Undetected, Tested (positive), and Removed Approach) model was used by IITs of Kanpur and Hyderabad to

predict the COVID graph in India.

- It uses three main parameters to predict the course of the pandemic.
    1. Beta or contact rate measures how many people an infected person infects per day. It is related to the R0 value.
        - R0 value is the number of people an infected person spreads the virus to over the course of their infection.
    2. 'Reach' parameter is a measure of the exposure level of the population to the pandemic.
    3. 'Epsilon' parameter is the ratio of detected and undetected cases.
- The model relied on a serosurvey conducted by the Indian Council of Medical Research (ICMR).

Source: PIB, The Hindu, The Indian Express, Down To Earth, Business Line, All India Radio

