PRACRITI: IIT Delhi

Why in News

Researchers at the **Indian Institute of Technology in Delhi** have developed a web-based dashboard **PRACRITI** for **predicting the spread of** Covid-19 in India.

- PRACRITI is the acronym for PRediction and Assessment of CoRona Infections and Transmission in India.

Key Points

- **Prediction of Covid-19 Cases**

    - The dashboard gives detailed **State-wise and district-wise predictions** of Covid-19 cases in India for a **three-week period.**
    - The data is **updated on a weekly basis** to accommodate **various effects due to administrative interventions, severity of viral strain, change of weather patterns.**
    - It also accounts for the **effect of different lockdown scenarios** such as the effect of locking down district boundaries, and implementing different levels of lockdown within a district.
    - It also **includes the effect of movement of population** across district/state borders in the wake of Covid-19.
- **Provides R0 Value**

    - PRACRITI provides the R0 values **of each district and State** based on data available from the Ministry of Health and Family Welfare, **National Disaster Management Authority (NDMA)**, and the **World Health Organization (WHO)**. Reduction of R0 is key in **controlling and mitigating Covid-19** in India.
    - **Reproduction number (R0):**

        - Reproduction number (R0), pronounced 'R naught' refers to the **number of people to whom the disease spreads from a single infected person.**
        - For instance, if an active Covid-19 patient infects two uninfected persons, the R0 value is two.
- **Working:**

    - Predictions are based on a recent mathematical model, namely, **Adaptive, Interacting, Cluster-based, Susceptible, Exposed, Infected, Removed (AICSEIR) model.**
    - This is a modified form of the traditional SEIR model and it caters for the interactions that occur between sub-populations such as districts or states. The model **divides population into following four classes:**

        - Susceptible refers to people who have **not been exposed to the coronavirus.**
        - Exposed refers to those who have been **exposed to the virus from an infected person.**
        - Infected refers to those who are **actively infected with Covid-19.**
        - Removed refers to those who are **no longer a carrier of the virus.**

- **Benefits**
    - Such a platform will be highly useful for **healthcare organisations as well as local and central authorities** to efficiently plan for different future scenarios and resource allocation.
    - These predictions can help the districts and states **having higher R0 to take rigorous measures** to control the spread of Covid-19, while for those with **low R0 they need to sustain measures and remain very vigilant.**

Source: TH

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