

DST initiates COVID-19 India National Supermodel for monitoring infection transmission & aid decision-making by policymakers

The Department of Science and Technology (DST) has initiated a COVID -19 Indian National Supermodel to help monitor the future transmission of infection, thus aiding decisions involving health system readiness and other mitigation measures.

While the Government is keeping a close watch on infectivity and mortality, it is imperative to bring in a robust forecasting model for predicting the spread and enhancing disease surveillance. Numerous mathematical models for Covid-19 forecasting and surveillance are being worked out by investigators funded by DST-SERB (Science and Engineering Research Board) and other agencies.

Inspired by India's history of using mathematical models for disaster management planning of metrological events, DST has initiated this exercise to pool in expertise in the field and create one model for the entire country that will be subjected to rigorous tests required for evidence-based forecasting, routinely practiced in weather forecasting communities.

The model will entirely rely only on the data that is relevant to COVID-19, and also have an adaptive built-in component to learn from the newer trends in the data. It will aggregate successful evidence-based mathematical and statistical forecasting models and include the best predictive analytics for robust forecasting of infectious disease spread. The supermodel could be used by the policymakers in India and around the world to overcome difficulties in predicting the rate of spread of infection and how it would burden the healthcare sector, thereby curbing the epidemic.

As part of this initiative, Jawaharlal Nehru Centre for Advanced Scientific Research (JNCASR) and IISc, Bangalore will co-ordinate to connect and work with all COVID-19 modeling projects and programs in the country. This will help develop a set of benchmarks to assess various models and to finally deliver the COVID-19 India National Supermodel. The Coordination team will consult and work with the research groups active in modeling, various software developers, and reputed companies to ensure delivery of a suitable user interface and software.

A consultative committee will work closely with DST and SERB and coordinators (JNCASR and IISc Bangalore) and modellers of this initiative to provide critical inputs on technical aggregation, guidance, and final delivery of a robust Supermodel.

“Mathematical modeling and simulations for the spread of COVID-19 virus and its impact are not mere academic exercises but are critical needs for rational decision making, planning, and resource management. It is thus of vital importance that a robust National Model which is vetted by a large cross-section of scientific community working in the area is developed,” said Prof Ashutosh Sharma, Secretary, DST.