Initiatives to deal with COVID-19

1. Mobilising Scientific Community

The office of the PSA has played coordinating role for government ministries/departments, scientific institutions, academia and enterprises to accelerate decisions on dealing with research and innovation based actions to meet the COVID-19 challenges. Support has been provided to enable national, state and local bodies towards evidence-based action and to mobilise the scientific community for providing targeted solutions.

To this end, the O/o PSA constituted the Science & Technology Empowered Committee for COVID-19 on 19 March 2020. The committee is chaired by Prof. Vinod Paul, Member, NITI Aayog and Prof. K. VijayRaghavan, Principal Scientific Adviser, and is responsible for coordination amongst science agencies, scientists, industries and regulatory bodies, and to take speedy decisions on research and development related issues to tackle the Sars-Cov-2 virus and the COVID-19 disease.

A mechanism has been evolved between various STI funding ministries/departments/agencies to ensure a rapid and coordinated mechanism to support various research and innovation projects for:

(i) a Task Force on Repurposing of Drugs (TFORD-COVID19) has been constituted to look into the status of scientific evidence, technology readiness levels, status of IP, manufacturability in India etc. In depth information on various drug candidates will help to allow informed decision making. The regulatory/legal processes are also being addressed.

(ii) mathematical models to track the disease spread and models to predict the medical equipment and auxiliary requirements of the COVID-19.
(iii) manufacturing of test kits, ventilators, PPE in India.

The Government of India on 29 Mar 2020 constituted 11 Empowered Groups of Officers, under DM Act 2005, to engineer a well-planned & coordinated emergency response to ensure health & economic security of millions of Indians from COVID19 outbreak. These Groups are empowered to identify problem effective solutions therefor; delineate policy; formulate plans; and take necessary steps for effective and time bound implementation for these. PSA is a member of the Group responsible for coordinating with private sector, NGO, International bodies for response related activities.

2. Expanding Testing facilities in the country

The Empowered Committee on R&D has worked towards enhancing the testing facilities to meet COVID-19 related challenges by leveraging the existing resources (instruments and manpower) in GoI labs. It has enabled ICMR to issue the required notification allowing institutions under DST, DBT, CSIR, DAE, DRDO and Indian Institute of Science (IISc) to self-assess and prepare their BSL labs for research and testing of corona virus.

O/o PSA has developed a “Handbook for COVID-19 testing in Research Institutions” which allows more such labs to self-assess its preparedness, in terms of equipment, staff and expertise required for COVID-19 testing. A detailed checklist has been outlined, which can be used by research lab to self-assess and indicate their preparedness for declaring the lab as a research and testing facility for COVID-19 after ICMR approval. (This handbook has been assembled by a group of young researchers whose efforts are gratefully acknowledged).

3. Aarogya Setu- Links contact tracing and testing

The O/o PSA has been instrumental in the launch and outreach of the AarogyaSetu App. The app built through public private partnership will help people assess themselves the risk for their catching the Corona Virus infection by tracking infected cases in the vicinity. This is a data protected App using cutting edge Bluetooth technology, algorithms and artificial intelligence tools.

The App will help the administration to take necessary timely steps for assessing risk of spread of COVID-19 infection, and ensuring isolation where required.

The PSA also serves on a committee constituted by the Cabinet Secretariat to evaluate and ensure development and launch of Citizen App technology platform to help citizens and government in combating COVID-19 issues arising out of this pandemic.
4. **Advisory on Homemade Mask Manual**

The O/o PSA has issued a detailed manual on homemade masks for curbing the spread of Coronavirus. The guide provides a simple outline of best practices to make, use and reuse masks to enable NGOs and individuals to self-create such masks and accelerate widespread adoption of masks across India. This has now become a part of the national advisory for citizenry issued by the MoH&FW.

The manual has been released in several regional languages.

5. **Guidelines for Hygiene and Sanitation in Densely Populated Areas**

The O/o PSA issued illustrative guidelines with precautions and measures for controlling the spread of COVID-19 in densely populated areas on April 13, 2020. The frugal and simple measures which can be easily adopted in lockdown can greatly help in controlling the spread of the disease in areas where toilets, washing or bathing facilities are shared.

The guidelines propose swift installation of do-it-yourself hand-washing stations that have been used world-wide to contain epidemics. Foot-operated stations not only reduce the chance of transmission by eliminating direct contact with potentially high infection areas, but also reduce the amount of water used by people during hand-washing. Designs proposed allow self-assembly by community volunteers and authorities, using affordable and locally available materials, even during lockdown and supply-chain challenges. An outline of good toilet practices to maintain sanitation and hygiene in communities have also been clearly outlined.

The guidelines were subsequently recommended by in the daily Press Brief of the MoHFW held April 14, 2020 for adoption across the country.

6. **COVID-19 Critical Medical Supplies Digital Platform**

COVID-19 critical medical supplies advisory cell is enabled by a digital platform to facilitate States with managing supply and demand of critical medical equipment, and enable efficient decision making with regards to procurement of the same.

The platform has been developed by Invest India (of DPIIT) in partnership with the O/o PSA and will be provided to the States through the MHA Empowered Committee. The portal will help:

- national Demand aggregation of critical medical equipment
- provide access to Supplier information at one place – GeM, Invest India, Industry Association (FICCI, PhD Chamber of Commerce, CII etc)
• enable states to estimate numbers of critical medical equipment based on number of patients and health care workers
• centralized query mechanism and online facilitation for States seeking advice on managing medical equipment demand/supply/usage
• single source of information for people, and infrastructure resources prepared by NSDS
• geotagging of crises management infrastructure (health care centers, isolation centers, etc.) along with district-wise patient load.

7. Convergence on the COVID Innovation challenges

The Office of the PSA has converged efforts across various government departments and programme to identify innovations that can tackle COVID-19 challenges. The effort has:
(i) brought together DST, AIM, StartUp India and AGNiI to evolve common criteria for evaluation and shortlisting of best solutions
(ii) sensitise R&D and academic institutions and City Clusters to submit solutions for COVID-19 challenges
(iii) enable new potential technologies for testing at government labs/academic institutions
(iv) connecting with industry partners through CII for ensuring rapid manufacturing
(v) channelling financial resources and other enabling mechanisms for their implementation
(vi) so far 22 Start-ups have been shortlisted for support by AGNiI team from more than 400 applications

8. Industry coordination and Participation through CSR

The O/o PSA worked with the Ministry of Corporate Affairs for issuing an enabling OM for the use of CSR funds for research and innovation projects for providing solutions to meet the COVID-19 challenges.

This has ensured the speedy engagement of industries to support the COVID crisis with resources through available CSR in support of the O/o PSA is coordinating with R&D labs for accessing these funds as Healthcare and preventive healthcare are covered under Schedule VII of Companies Act as Specified CSR activity.

9. Medical Equipment Regulation

The Office of the Principal Scientific Advisor has provided specific support to help understand and formulate regulatory requirements in the Indian context for ventilators and other medical equipment.

10. S&T Core Team
A "Science & Technology core team" has been set up in the office of the Principal Scientific Advisor to crowdsource ideas and solutions from experts, companies, academia and citizens to tackle the spread of the Covid-19 virus in the country.

11. Access to health care equipment for vulnerable sections

The O/o PSA is working on specific measures for elderly and the underprivileged and people without phone access.

12. COVID Gyan- Vigyan Prasar

The Office has been closely working with science communication agencies such as Vigyan Prasar. Covid Gyan (https://covid-gyan.in), a website dedicated to scientifically accurate COVID-19 content and resources, has been launched as a joint initiative of multiple research institutions.