The COVID-19 pandemic compelled governments and agencies world over to divert all resources towards the single point agenda of defeating coronavirus. As a result, we witnessed unprecedented rate of scaling up of healthcare facilities, vaccine development and fast tracking bio-research with a renewed trust in creating domestic capabilities. During this period we have not only strengthened our medical research capabilities but shown the world how it can be done. This year Budget 2021-22 has also realized the need to prepare India for any future emerging pandemic and by identifying health and wellness as the premiere of the proposed six pillars, government has put health research at the forefront.

In the Union Budget 2021, Finance Minister Nirmala Sitharaman allocated Rs 2,663 crore for Health Research for the upcoming fiscal year 2021-22. Apart from this a number of initiatives are proposed under the newly announced centrally sponsored scheme, PM Atmanirbhar Swasth Bharat Yojana (PM-ASBY) to develop capacities of primary, secondary, and tertiary care health systems, strengthen existing national institutions, and create new institutions to cater to detection and cure of new and emerging diseases. As part of that, an outlay of Rs 1995.18 crores has been allocated, which will be utilized in next six years to support these initiatives.

These include establishment of National Institute of One Health, creation of National Institutes of Virology in four regional zones across India, expanding the BSL-III labs network and regional research platform for South East Asia Region. These initiatives are for bio security & bio safety:- emergency preparedness and outbreak investigation. In addition to this, support to Medical Devices and Diagnostics Mission Secretariat (MDMS) will be provided for development of technologies for epidemiological diseases and division of eliminable diseases at ICMR-NARI, Pune are being set up towards attaining disease elimination targets.

ICMR has identified to establish regional NIV at Dibrugarh (North East Region), New Chandigarh (Punjab) and Bengaluru (Karnataka). The location of fourth regional NIV will be decided soon. Further, work on National Institute of One Health (NIO) at Nagpur, Maharashtra has been fast tracked. This institute will address issues of zoonotics infections and help in a better understanding of its human, animal and environment relationship.

Prime Minister Shri Narendra Modi has also termed the Budget 2021 as a ‘catalytic agent’ for further development of medical research and has called on the fraternity to work together towards this. The trust placed by the Prime Minister is a testament to the work done and recognition of the ICMR’s capabilities to realise the vision for an AtmaNirbhar Bharat. Altogether, the newly acquired wisdom and fresh lessons learnt from the COVID-19 pandemic will shape India’s long term healthcare and health research policies. With this ICMR has assumed the role of spearheading efforts towards development of sturdy and resilient health research capability.

Our Achievements

ICMR achieves milestone of conducting more than 20 crore COVID-19 sample testing in India.

Report on profile of cancer and related health indicators in the North Eastern region of India released.
Budget 2021 is a boost for developing the health research infrastructure to counter future epidemic

- 4 Regional National Institute of Virology to be established in the four corners of the country.
- National Institute of One Health (NIO) at Nagpur for research in ‘One Health’.
- Regional Research Platform for WHO South East Asia Region for research in existing and emerging health threats.

The Budget 2021 has placed health and wellness at the top of six pillars outlined by the finance minister. This is first time that health sector particularly health research has got such a large outlay with 137% increase in than last year. In the context of the coronavirus pandemic, the Government of India has focused on strengthening the bio-security, bio-safety and medical research infrastructure in India. Budget has announced a centrally sponsored scheme, PM Atmanirbhar Swasth Bharat Yojana (PM-ASBY) with outlay of Rs 64,180 crores to develop and strengthen existing national research institutions, and create new institutions, to detect and cure new and emerging diseases. As part of that, it is proposed to set up a national institution for One Health, a regional research platform for WHO South East Asia Region, 9 Bio-Safety level III laboratories and 4 regional National Institutes for Virology.

Regional NIV will help in efficiently countering the threats of viral pandemics/epidemics in the future. Provisions have been made in the budget to decentralise the load on National Institute of Virology, Pune through establishment of regional national institute of virology in four regions i.e. Eastern, Southern, Northern and Western regions of the country to support research at NIV, Pune. New NIVs will undertake research on topics like clinical, virology and immunological characterization of coronavirus and other viral disease; natural history and disease spectrum study for outcomes and co-morbidities. Employing new technology platforms and big data analytics like artificial intelligence for emerging viral infections.

Further, considering COVID-19 situation in the future there is need for scaling up the testing facilities to meet the unexpected future outbreaks. To build biosafety and biosecurity enabled infrastructure, budget 2021 proposes to upgrade 5 viral research & diagnostics labs into BSL-III laboratories and setting up of 4 mobile BSL-III labs. The BSL-III mobile laboratories will be used in outbreak situations for rapid processing and testing of specimens related to vector borne, human, animal and environment etc. This will ensure timely and early on-site diagnosis and rapid turnaround time for reporting, which will be supportive in formulating strategies for patient management, outbreak control and before time intervention. Upgradation of 5
VRDLs into BSL-III labs will cost around Rs 17 crore per lab, while setting up of mobile BSL-III laboratories will cost Rs 25 crore per lab.

With this budget, there has been a shift towards a holistic approach to Health with focus on preventive, curative, and wellbeing. The need for a dedicated centre for research in ‘One Health’ and enhance national capacity to deal with epidemics of all potential zoonotic diseases emerged since India has been identified as one of the four global hotspots at increased risk of emergence of infectious zoonotic diseases, drug-resistant and food-borne pathogens.

The government has adopted the ‘One Health’ approach to manage endemic and emerging epidemic threats of zoonotic diseases which is based on the need for human, animal (including wildlife), and environmental experts to work in coordination in order to better prevent and control diseases.

Indian Council of Medical Research has taken an important and crucial step towards the achievement of ‘One Health’ goal through establishment of a dedicated infrastructure in the form of National Institute of One Health (NIO) at Nagpur, Maharashtra with Maharashtra Animal and Fishery Science University as the knowledge partner. The National Institute of One Health, with focus on zoonotic agents, will help in increased preparedness and laboratory capabilities for identification of novel and unknown zoonotic agents and investigation of outbreaks, and develop training components viz. Biosafety and biosecurity for laboratories, enhancing diagnostic capabilities. It is no doubt going to be an institute of world class knowledge.

As the interconnectedness of human, animal and environmental factors spreads across geographical borders, a World Health Organization - South East Asia Region Research Platform will be setup by ICMR in collaboration with WHO, 11 partner countries will join this platform. This will enable close coordination and communication across member nations and various stakeholders. WHO-SEAR has eleven member nations namely Bangladesh, Bhutan, Democratic People’s Republic of Korea, India, Indonesia, Maldives, Myanmar, Nepal, Sri Lanka, Thailand and Timor-Leste.

It will serve to strengthen coordinated efforts to fight existing and emerging health threats in the region. Regional Research Platforms on infectious diseases of public health importance in the South-East Asia Region will leverage existing capacities of SEAR to work on infectious diseases that are of priority to this region. ICMR has envisioned building research capabilities for biosecurity preparedness and strengthening pandemic research through multi-sectoral national institutions.

After Budget 2021 announcement, Prime Minister Shri Narendra Modi addressed a webinar on implementation of Budget provisions in the health sector on 23rd February 2021. Prime Minister lauded India’s resilient fight against the coronavirus pandemic and credited the role of Health research in strengthening the fight. He recalled how, within a few months, the country could set up a network of 2500 labs and how it could reach a milestone of 21 crore tests from a mere dozen tests. Prime Minister called the budget 2021 a catalytic agent and impressed upon the need for all stakeholders to work together.

With this budget 2021, there is a promise of sustained momentum in development of health research infrastructure which is going to prove a cornerstone of a holistic approach to health with focus on preventive, curative, and wellbeing.

Prime Minister outlined the four pronged strategy towards a healthy India. Prevention of illness and promotion of wellness, cheap and effective treatment to the poorest of the poor, increase the quality and quality of health infrastructure and health care professionals and work on mission mode to overcome obstacles.
Milestone of more than 20 crore COVID-19 testing achieved by ICMR

- Last 5 crore testing conducted in within last two months.
- 5T approach of Test, Track, Trace, Treat and use of Technology continues to show results.
- New cases concentrated in 6 states of Maharashtra, Kerala, Punjab, Karnataka, Tamil Nadu and Gujarat.

Indian Council of Medical Research (ICMR) has achieved the milestone of conducting 20 crores COVID-19 sample testing. Till 5th February 2021 India had tested 20,06,72,589 sample, with average testing of more than 7 lakh per day in last 30 days. COVID-19 testing numbers has decreased during last few months from high of almost 11 lakhs per day, which signifies how successfully India has contained COVID-19 spread.

During September 2020 India had seen peak of coronavirus cases. Since then new cases of coronavirus has reduced and it is more or less concentrated in 6 states of Maharashtra, Kerala, Punjab, Karnataka, Tamil Nadu and Gujarat. According to latest data almost 86% of the new cases are from these six states. These states have been instructed to continue with effective surveillance strategies in respect of potential super spreading events. There is a need for effective testing, comprehensive tracking, prompt isolation and quick quarantine of close contacts.

Prof. (Dr.) Balram Bhargava, Director General, ICMR said, “Large scale testing has enabled early identification, prompt isolation & effective treatment of COVID-19 cases. This strategy has led to restricting spread of coronavirus across the country. This testing milestone is testimony to how successfully India has implementated 5T approach of “Test, Track, Trace, Treat and use of Technology” efficiently.”

Ramping up of diagnostic infrastructure and promoting affordable kits across India was at the core of increased testing per day. Through ardent efforts, it was ensured that different testing platforms like general testing (RT-PCR), high throughput testing (COBAS), testing at remotest places and PHCs (TrueNAT, CBNAAT), testing in containment areas (Rapid Antigen Testing), mobile RT-PCR laboratory were made available.

In recent days, we have seen marginal increase in new cases in certain states. So we cannot let our guard down; we need to continue following COVID-19 precautions, appropriate behaviour cannot be diluted. All states should ensure that there is no let up on strategy for containment, surveillance, contract tracing, isolation and quarantine. This is the only way other than COVID-19 vaccine that we can break the COVID-19 transmission.
Indian Council of Medical Research - National Centre for Disease Informatics and Research (NCDIR), Bengaluru has released a report on profile of cancer and related health indicators in the North Eastern region of India. The study was done to find the magnitude of cancer, diversity and mapping of cancer burden in the North East Region states of Arunachal Pradesh, Assam, Manipur, Meghalaya, Mizoram, Nagaland, Sikkim, and Tripura. The estimates in the report are based on cancer data compiled by eleven population-based cancer registries (PBCRs) in all the eight states. The report was launched on the occasion of World Cancer Day, 4th February 2021, by Prof (Dr.) Balram Bhargava, Secretary DHR & Director General, ICMR and can be accessed at: https://ncdirindia.org/All_Reports/NorthEast2021/resources/NE_Complete.pdf

According to the statistics, in all the states, the probability of developing cancer over a lifetime was as high as 1 in every 4 males and 1 in every 6 females in Kamrup urban area of Assam. The incidence of cancer was higher in males than in females except in Manipur and Sikkim. The commonly occurring cancers among males were cancer of the oesophagus (13.6%) and lung (10.9%), while in females, cancer of the breast was the leading site (14.5%), followed by that of cervix uteri (12.2%).

Prof (Dr.) Balram Bhargava, Secretary DHR & DG, ICMR said, “The NE cancer registries have done commendable work. The National Cancer Registry Program has played a vital role in NER towards mapping cancer burden over several years. The scientific evidence generated from the registries has led to strengthening of health infrastructure in the region and will provide the guidance for future policy decisions”.

The report also provides insight into the prevailing cancer risk factor profile capacity for treating cancer and death statistics for each state from various sources. According to the finding, among the eight northeast states, tobacco use was highest in Tripura and lowest in Sikkim. Men and women from Arunachal Pradesh, who were over 15 years of age, consumed higher proportions of alcohol than in other NE states. These risk factors influence cancer outcome and survival.
ICMR salutes women scientists for their contribution in fight against COVID-19

International Day of Women and Girls in Science was observed at various institutes of Indian Council of Medical Research on 11 February, 2021. The International Day of Women and Girls in Science was recognised by resolution of the United Nations General Assembly on 22 December, 2015. The day recognizes the critical role women and girls play in science and technology. As ICMR was at the forefront for devising policy for diagnostic, testing platform, treatment strategies and vaccine development during the coronavirus pandemic. Women scientists and staff came forward and made valuable contributions towards effective response against coronavirus pandemic. ICMR appreciates and values these sheroes.

India’s laboratory based response to COVID-19 was led by ICMR-National Institute of Virology (NIV) situated at Pune. NIV was the only laboratory that formulated the RT-PCR methodology and started COVID-19 testing. NIV has many achievements to boast of like confirming the first case of COVID-19 entering the Indian boundary to culturing the virus and its variants (UK, South Africa & Brazil) to the development of COVID KAWACH ELISA and eventually the indigenous vaccine, ‘COVAXIN’. Dr. Priya Abraham is leading the charge at the eminent institute. She believes that leaders have to lead from the front and work hard, in fact harder than their team. And they should be able to understand the importance of human resources – of the people who work for them. She spent many sleepless nights in the pursuit of achieving one goal and moving to the next swiftly. It is due to her leadership skills that NIV has delivered what was expected of a national virology institute in the tumultuous time of viral pandemic.

Dr. Priya Abraham

She heads the virology unit at ICMR headquarters; Dr. Nivedita Gupta spent sleepless nights in figuring out the response strategy since the initial days of Country’s encounter with SARS-CoV-2. The humongous task of ramping up the national testing capacity was put on her shoulders. She made sure that no stone is left unturned and roped in different sectors of the government machinery along with WHO-India & SEARO to create a mechanism of ensuring high quality testing by virtual lab inspections, troubleshooting, organizing training and implementing Quality Control program. She formulated testing protocols, advisories, conducting validations and commissioning multiple testing platforms like RT-PCR, TrueNat and CBNAAT for increasing outreach of testing till district level. As on Feb 5, 2021, close to 1200 diagnostic kits have been validated and 70% products are indigenous in line with “AtmaNirbhar Bharat”. Indigenization has led to reduction in cost of diagnostic products by almost ten times. She also coordinated development of COVID-19 vaccines: pre-clinical animal studies, clinical trials of ‘COVAXIN’ and ‘COVISHIELD’ as well as other vaccines in pipeline (Novavax, ZyCoV-D and Bio-E).

Dr. Nivedita Gupta

Dr. Sanghamitra Pati is the director of ICMR-Regional Medical Research Centre, Bhubaneswar. She led the fight against COVID-19 pandemic and contributed significantly to the effective management and control of COVID-19 in Odisha, as well as neighboring states of Jharkhand and Chhattisgarh. Since the very onset, Dr Pati ensured a smooth and seamless coordination between ICMR and the Odisha government towards strengthening of COVID-19 testing, surveillance and logistics management. RMRC, Bhubaneswar initiated the COVID-19 testing at its Regional Virus Research and Diagnosis Laboratory (VRDL) in March, 2020 and was the only testing facility in entire Odisha at that time. But, to fulfill the increasing testing needs, she operationalised the high throughput platform COBAS-6800 by setting up another BSL-II plus facility in record time. She was also involved in state-wide multiple rounds of sero surveys in Odisha, Jharkhand and Chhattisgarh, in addition to the national sero surveys.
Under the leadership of Dr. Shanta Dutta, the Director, ICMR-NICED (ICMR-National Institute of Cholera and Enteric Diseases) was involved in various emergency activities in connection with COVID-19 infection during the pandemic situation. Since the inception, ICMR-NICED was designated as the regional center for testing clinical samples by RT-PCR for diagnosis of COVID-19 infection in West Bengal and other Eastern states of India. NICED has completed testing of more than 168,780 clinical samples by RT-PCR and was also involved in capacity building for RT-PCR test to the lab personnel of both the Govt. (Medical colleges and hospitals) and non-govt. labs in West Bengal. NICED was involved in kit validation, kit distribution and various multi centric vaccine trials to determine their safety, efficacy and immunogenicity against SARS-CoV-2 infection like Recombinant BCG (rBCG) vaccine trial and phase III trial of the indigenous vaccine COVAXIN.

The scientist leading Asia’s first state-of-the-art-facility to handle high risk pathogens at NIV, Pune is Dr Pragya. D. Yadav. Her efforts and perseverance resulted in the isolation of SARS-CoV-2 virus. She played a critical role in development of ELISA and point-of-care diagnostics that were used in countrywide surveillance and in many field labs for screening COVID-19 samples and helped in management of the patients. Her contribution in conducting animal studies for the development of indigenous vaccines (COVAXIN & ZyDCoV) has been immense. She published 34 papers in peer reviewed journals and answered many unknown facts of virus and disease, which helped in strengthening the countries response and by developing vaccines made India self-resilient in this tough time.

Another gem at ICMR-NIV is Dr Varsha Potdar heading the National Influenza Centre (NIC). She and her team were responsible for developing the in-house real time RT-PCR assay that helped in the successful identification of the first three cases of SARS-CoV-2 in the country. She developed a compact version of testing methods that augmented the national testing capacity (200 tests to 1 lakh tests per day). Thus far 57 lakh reagents have been distributed among 1200 government laboratories. The kit serves as the gold standard assay for the country. She is in the process of developing a real time based kit to detect UK and South Africa variants. A combo-kit for influenza and COVID-19 has been successfully developed and being used currently by the NIC. She is also involved in testing the diagnostic kits developed in the country. 90% of the country’s kit validations are being undertaken by NIV. She has published around 16 research articles including a perspective and book chapter in the area of COVID-19.

Dr. Padmapriyadarsini is clinician by training in the Department of Clinical Research at ICMR-NIRT. She quickly planned and executed two clinical trials—first one on repurposing BCG vaccine for the prevention of morbidity and mortality among elderly individuals from COVID-19 and another one is testing the safety & efficacy of COVISHIELD. Dr. Padmapriyadarsini was also nominated as the principal investigator of COVID-19 vaccine COVISHIELD, which was developed in collaboration with the Serum Institute of India and ICMR. She and her team successfully executed this vaccine trial for the prevention of COVID-19 in the country. ICMR-National Institute for Research in Tuberculosis is famous for its contribution in the arena of tuberculosis, it rose to the occasion and delivered in terms of conducting clinical trials, COVID-19 testing and also acted as depot of ICMR in the country for stocking and distribution of COVID test kits and reagents to the regional labs.
Dr. Luke. E. Hanna is the laboratory head at ICMR-NIRT, Chennai. She set up a state-of-the-art COVID-19 testing facility including a BSL-II laboratory in a record time of 2 weeks for testing SARS-CoV-2 samples. ICMR approval for testing was quickly obtained, standardized operating procedures were developed, a large team comprising more than 20 laboratory workers were provided intensive training on biosafety measures, testing and reporting procedures and bio-waste management. She and her team including a good number of female staff worked all 7 days a week, at times all through the night, receiving samples at odd hours and continuing to provide test results in 24 hours’ time, in spite of the successive lockdowns. She and ICMR-NIRT lab is a representative of other 2500 labs operating in the country that are working tirelessly to keep COVID-19 in check.

Dr. Roli Mathur heads the ICMR Bioethics Unit at ICMR-National Centre for Disease Informatics & Research, Bengaluru and is the nodal officer for DHR ethics committee registry. In February 2020, under her leadership, ICMR Bioethics Unit was recognised as the first WHO collaborating centre for strengthening ethics in the South East Asia Region. Due to her efforts, in April 2020 India became one of the first countries in the world to publish the ICMR National Guidelines for Ethics Committees reviewing research during COVID-19 pandemic as well as the standard operating procedures for review of research in an emergency. As the member secretary of Central Ethics Committee on Health Research, which serves as the National Ethics Committee, she coordinated robust ethics review of large multicentre studies on clinical, basic sciences or epidemiological aspects of COVID-19 conducted by ICMR scientists across the country. Since February 2020, she is a member of WHO expert group on ethics & COVID-19, and has been contributing to a number of WHO publications and reports.

Dr. Aparna Mukherjee, who heads the Clinical Trial and Health Systems Research Unit at ICMR Headquarters. This study was conducted in 39 centers across the country with utmost scientific rigor and helped inform the policy makers and clinicians in India regarding the cautious use of convalescent plasma. Now, she is actively involved in National Clinical Registry of COVID-19 – a comprehensive clinical database for the hospitalized COVID-19 patients.

During initial days of COVID-19, important evidence was provided by the World’s largest plasma therapy trial in form of PLACID trial. This trial was also led by Dr. Aparna Mukherjee, who heads the Clinical Trial and Health Systems Research Unit at ICMR Headquarters. This study was conducted in 39 centers across the country with utmost scientific rigor and helped inform the policy makers and clinicians in India regarding the cautious use of convalescent plasma. Now, she is actively involved in National Clinical Registry of COVID-19 – a comprehensive clinical database for the hospitalized COVID-19 patients.

Responding to the need for generating evidence on treatment options for COVID-19, Dr. Godbole, a senior scientist at ICMR- National AIDS Research Institute, Pune, successfully led the ICMR-WHO Solidarity Pandemic Emergency Treatment Trial (WHO Solidarity Trial) as the National Coordinator and Principal Investigator. This multi-country multicenter trial was initiated in India in April 2020, within a month of commitment to joining this global effort following all national and local regulatory approvals. Initially, four potential antiviral agents were evaluated in the trial with nearly a thousand fifty participants in 26 sites across India. The interim results demonstrated little or no effect on overall mortality, initiation of ventilation and duration of hospital stay in hospital. Negative results are extremely important because they help avoid use of ineffective drugs saving costs and preventing side-effects and a false sense of security. Thus this trial was very important for clinical care of COVID-19.
Indian Council of Medical Research (ICMR) has established itself as apex body in biomedical research not only in India but also globally. In current situation, the collaborative efforts in bio-medical science and social–behavioral research have progressed at a rapid pace with India providing a rich scientific expertise internationally.

Recently, a Brazilian delegation led by H.E. Mr. Marcos Pontes, Minister of Science Technology & Innovation, Government of Brazil visited ICMR head quarters at New Delhi on 24th February 2021. Members of delegation met Prof. (Dr.) Balram Bhargava, Secretary, DHR and Director General, ICMR and his team to exchange views on themes of common research interest and possible avenues for collaborative partnership. The team was also apprised upon the existing awareness for India-Brazil cooperation and India’s strategy for prevention, treatment and vaccination against COVID-19. Three IJMR special issues on COVID-19 and ICMR’s publication on “Gandhi and Health @150” & Coffee Table book ‘Touching Lives’ were also presented to the visitor.

Such international collaborations are sought under bilateral, multilateral or regional framework modes for facilitating and strengthening interactions among governments, academia, institutions and industries in the areas of mutual interest. Currently, India has several bilateral Science & Technology (S&T) cooperation agreements with other countries to facilitate cooperation in the areas of biomedical research between India and foreign countries. ICMR operates in close cooperation with the Indian Ministry of Health & Family Welfare, Ministry of External Affairs, Indian missions abroad and foreign missions in India for the international collaborations.
Hon’ble Health and Family Welfare Minister, Dr Harsh Vardhan visited ICMR-NICED at Kolkata

Dr Harsh Vardhan, Hon’ble Health and Family Welfare Minister visited ICMR-NICED on 6th February, 2021. He was welcomed by Director of ICMR-NICED, Dr Shanta Dutta and other scientists of the Institute. During his visit he toured the COVID-19 testing facility COBAS 8800 at the institute and expressed his appreciation for the work done during COVID-19 pandemic.

The ICMR-National Institute of Cholera and Enteric Diseases NICED in Kolkata has been recently designated as a World Health Organization collaborating centre for research and training on diarrhoeal diseases. A WHO collaborating centre is an institution designated by the Director-General of WHO to form part of an international collaborative network set up by WHO in support of its programme at the country, intercountry, regional, interregional and global levels.

ICMR–NICED is engaged in researching and developing strategies for treatment, prevention and control of enteric infections and HIV/AIDS threatening the Nation’s health. Institute has extended its support for investigations of any outbreaks of diarrhoeal diseases, infective hepatitis and unknown fever both in the state of West Bengal as well as in any other part of the country as per requirement.

ICMR develops new technology for COVID-19 testing

The Indian Council for Medical Research (ICMR) has been at the helm of innovating new technology for COVID-19 testing. In order to further reduce the turnaround time of these tests and make it even more affordable, ICMR has come out with a new technology called RT-Lamp technology. This has been developed by ICMR-NIV Senior Scientist Dr. Shyam Sundar Nandi and his team. The RT-LAMP technology takes just one hour against four hours taken by the commonly used RT-PCR method. RT-LAMP is cost effective and does not cost more than Rs. 200 per test.

The RT-LAMP based COVID-19 test offers several merits when compared with the RT-PCR method. The latter method requires diverse temperatures in a single cycle. Therefore, RT-PCR methods require costly thermal cycler and real-time PCR instruments. On the contrary, the RT-LAMP technique doesn’t need a thermal cycler because it uses a steady temperature (isothermal) of 65°C for DNA amplification.

An additional merit is the storage requirement for LAMP reagents. It requires 4°C (normal refrigerators) compared to PCR reagents, which need -20°C (deep freezers), increasing the expenses. The RT-LAMP method doesn’t demand arduous formulations like RT-PCR. It is inexpensive and doesn’t require sophisticated devices. Also, the test can be carried out using minimal expertise and facilities.
ICMR is available on Facebook, Twitter and Instagram. For latest update about COVID-19 and other medical research breakthrough, you can follow ICMR’s Official handles.

From ICMR’s perspective, we’ve worked on testing and vaccine, we scaled up from 1 lab to 2,500 labs. We innovated from using molecular tests very early. The pandemic turned out to be a huge opportunity for India to scale up its healthcare infrastructure: Baram Bhargava, ICMR DG