When the first case of coronavirus was reported in India back in January this year, experts from across the world said that the country with 130 crore population will bow down to this pandemic. Looking at the situation at that time, the statement appeared true to many as the country had only one lab to test COVID-19. Also, this pandemic had either broken the backbone of many developed countries or brought them on the verge of collapse.

Even the healthcare system of Italy, which is counted among the leading countries in terms of health facilities, had collapsed. At the same time, the condition of the USA, that spends around 4 trillion dollar on its health facilities, is deteriorating day by day. In such a prevalent scenario, it was common for experts to have the notion that a developing country like India with average healthcare facilities will not be able to fight this invisible enemy. However, the Indian Council of Medical Research (ICMR) set an example in front of the world by putting up a valiant face of India showing how to fight emerging diseases with efficient mechanism and determination despite limited resources.

We can recall that during February and March, India had a lack of resources for prevention and containing the spread of COVID-19. Neither did we have logistic as per standard, neither testing lab nor dedicated COVID hospital for treatment. The ICMR accepted the challenge and worked sincerely to reverse the scenario. Today, the situation has changed significantly. Now, India has sufficient dedicated COVID hospital, testing labs and necessary logistics for treatment.

Since the beginning of the lockdown, ICMR has focused on triple T – 'Testing, Treatment and Tracking'. This is the reason India is still in a better position than many other countries. Though the number of infections has registered an increase over the last two months, this is happening solely due to enhanced testing. India has so far tested over one crore fifty lakh samples.

Not only this, India has been testing around 23.7 people per lakh population, much higher than WHO's guidelines of testing 14 people per lakh population. Also, the testing has been increased in the areas where the infection is more than 10 percent.

The functioning of ICMR can be understood from the fact that it has established COVID testing labs even in the remotest parts of the country. These include areas where it is difficult to travel. For example, ICMR has established COVID-19 testing lab at an altitude of 18 thousand feet in Leh. Apart from this, the scope of testing has been expanded by setting up a lab at Port Blair, Andaman.

ICMR has also equipped its Mumbai, Kolkata and Noida institutes with state-of-the-art COBAS testing machines to enhance the testing in the cities. ICMR's effort is paying a dividend as the recovery rate has continuously been increasing in India.

ICMR is taking on this pandemic head-on with its full might. The entire focus of the institute is on increased testing. The situation is largely under control except in a few states. The improving situation in the National Capital Delhi is a testimony to this.
Prime Minister Narendra Modi on July 27 inaugurated three high-capacity, high-throughput state-of-the-art labs at Mumbai’s National Institute of Research in Reproductive Health (NIRRH), Kolkata’s National Institute of Cholera and Enteric Disease (NICED) and Noida’s National Institute of Cancer Prevention and Research (NICPR). The new facilities will enhance testing capacity by 10,000 samples per day.

Working on the ‘Test, Track and Treat’ strategy to contain the COVID-19 pandemic, Indian Council of Medical Research (ICMR) has continuously been working to enhance the testing capacity across the country. ICMR is deploying high-end, high-throughput testing machines in its research institutes to ramp up the testing. ICMR has now installed state-of-the-art COBAS testing machines in its institutes based in Mumbai and Kolkata.

To boost COVID-19 testing in Mumbai, ICMR has equipped its National Institute for Research in Reproductive Health (NIRRH) with COBAS 6800 machine. Using COBAS 6800, the institute’s testing capacity will go up to around 1000 samples per day from present 200 samples per day.

ICMR has also outfitted its Kolkata-based National Institute of Cholera and Enteric Diseases (NICED) with COBAS 8800 COVID-19 testing machine. The high capacity sophisticated machine will significantly amplify the testing capacity of the institute by 3000 samples per day.

In its Noida-based National Institute of Cancer Prevention and Research (NICPR), ICMR has set up a new Rs 20.0 crore high-capacity lab that can test up to 6000 samples a day. The new lab equipped with RT-PCR machine will not only expedite COVID-19 testing but will also take it to a new height in the city.

PM Shri Narendra Modi said these high-tech labs are a step towards ensuring a robust healthcare system and can also be used in detecting and testing other emerging diseases.

Testing capacity in these cities to go up significantly

Early detection to help in containing the pandemic

Over 1300 labs working across India as on July 31

Union Minister of Health and Family Welfare Dr Harsh Vardhan along with MoS Shri Ashwini Choubey during the inauguration of labs by PM during July 27 event.

Chief Minister of Uttar Pradesh Shri Yogi Adityanath during the inauguration of labs by PM during July 27 event.

Chief Minister of Maharashtra Shri Uddhav Thackeray during the inauguration of labs by PM during July 27 event.

Chief Minister of West Bengal Ms. Mamata Banerjee during the inauguration of labs by PM during July 27 event.
Uttar Pradesh Chief Minister Shri Yogi Adityanath inaugurates BSL-2 plus laboratory at ICMR-RMRC, Gorakhpur

Uttar Pradesh Chief Minister Shri Yogi Adityanath inaugurated the newly established BSL-2 facility for emerging pathogens including COVID-19 at ICMR-RMRC, Gorakhpur on 6th July, 2020. He also reviewed the ongoing TB prevalence Survey in Eastern UP and appreciated the mobile lab cum bus fitted with X-ray, CBNATT with wifi facility being used for the Survey. Shri Yogi Adityanath also appreciated the ongoing construction of new building of RMRC and suggested for its early completion.

This Laboratory has two type-A2 bio-safety cabinets suitable for handling the Risk Group 2 & 3 pathogens including Covid-19 virus. These bio-containment workstation features inward airflow for personnel protection. Thus, there is a reduced exposure to lab personnel to infectious clinical materials.

Each Bio-safety cabinets are also having electrical back-up for 20-30 minutes. The negative pressure in the laboratory is helpful to provide personnel, product and environmental protection. The sample processing will speed-up due to this laboratory which ultimately enhances the testing capacity of COVID-19 samples in our institute.
ICMR urges private hospitals to play bigger role in testing

- ICMR requested states to put a price cap on RT PCR tests in pvt labs
- Calls for increasing testing by adopting campaign mode
- Advises States not to restrict individuals from getting tested

In the wake of increasing COVID-19 cases in the country, Indian Council of Medical Research (ICMR) has suggested that private hospitals shoulder larger responsibility in testing. ICMR feels testing expansion should be done in a campaign mode and private hospitals should be roped in to play a more constructive role in the expansion of testing and make it accessible to the common populace.

ICMR has requested states to put a price cap on RT PCR testing in private laboratories.

ICMR has been working to enhance the testing capacity in the country. As on 31st July, it has approved 1,339 laboratories for COVID-19 testing. Of this, 911 labs are in the public sector and 428 are in the private sector. ICMR is also working to expand the options available for testing and is working to validate new kits.

ICMR has also advised States/UTs, where capacity utilization of the testing labs is grossly sub-optimal, to ensure full capacity utilization of the labs.

To expand testing, ICMR has also advised that both government or private doctors can prescribe for COVID-19 tests. ICMR has advised States/UTs to facilitate testing at the earliest by enabling all qualified medical practitioners, including private practitioners, to prescribe COVID test to any individual fulfilling the criteria as per ICMR guidelines.

Recommending that laboratories should test any individual per the ICMR guidelines, the council said that state authorities must not restrict an individual from getting tested.

ICMR has advised States/UTs to set up camps/using mobiles vans in high incidence areas to collect samples of all symptomatic individuals as well as their contacts and get those samples tested by using rapid antigen tests. As per protocols, negative of symptomatic is subjected to undergo an RT PCR test.

ICMR recommended that laboratories should test any individual per the ICMR guidelines and added that state authorities must not restrict an individual from getting tested.
States must ramp up rapid antigen testing: ICMR

- Rapid antigen test helpful in expediting testing
- Early detection helps in containing the spread of infection
- Negative of symptomatic in rapid antigen to undergo RT-PCR test

Indian Council of Medical Research (ICMR) has asked all states/UTs to significantly ramp up rapid antigen testing. The council has asked states/UTs to set up centres where rapid antigen tests can be conducted. ICMR has appealed to start rapid antigen testing in PSUs, government and private institutions, temples and other similar places. Dr Balram Bhargava, DG, ICMR has advised states that the number of tests can be enhanced significantly using rapid antigen testing. This will help in early detection of the COVID-19 positive patients and thereby helping in containing the spread. ICMR has also suggested States/UTs to identify/approve all government and private facilities who would be providing COVID-19 diagnosis through antigen-based assays. The apex medical body has also directed states to link each identified antigen testing facility with RT-PCR centre to conduct confirmatory tests.

As per protocols, negative of symptomatic is subjected to undergo an Reverse transcription polymerase chain reaction test.
Test, Track, Treat: ICMR’s effort pays dividends; 10 states lead India’s fight with 50-plus COVID-19 testing labs

- Total COVID-19 testing lab crosses 1300 mark in India
- Three states have over 100 testing labs each
- Daily testing capacity over five lakh now

As India continues to register a spike in COVID-19 cases, the states have been focusing on the strategy of ‘test, track, treat’ to contain the spread of the pandemic. Indian Council of Medical Research, ICMR, has continuously been working to ramp up testing across the country. With a growing network of over 1339 ICMR certified COVID-19 testing labs, the daily testing capacity has already surpassed five-lakh mark.

According to World Health Organisation (WHO) guidelines, a minimum of 14 tests per lakh population is a must. India has been conducting around 23 tests per lakh population per day. Number of tests goes up significantly in the areas where more than 10% of the total samples are found to be positive. Due to ICMR’s guidelines and timely interventions, the recovery rate in India today is 1.8 times the number of active cases.

As many as 10 states are leading India’s relentless battle against COVID-19 with 50 or more testing labs. ICMR has approved over 100 COVID-19 testing labs in Uttar Pradesh (155), Maharashtra (133) and Tamil Nadu (121) each while Karnataka (97), Madhya Pradesh (86), Andhra Pradesh (71), Gujarat (58), West Bengal (59), Delhi (60) and Kerala (58) each have fifty plus testing labs. These are closely followed by Bihar (48), Odisha (47), Telangana (40), Rajasthan (37) and Jharkhand (33) as on 31st July, 2020.

ICMR’s effort seems to have been paying dividends as India’s testing capacity has gone up multi-fold in the last three months. From just around 4,000 tests in April, India has now been testing on an average 3,39,744 samples in July. On 30th July, a record 6,42,588 samples were tested across the country.
Not enough evidence that Remdesivir, itolizumab, tocilizumab reduces mortality: ICMR

ICMR has said that there isn’t enough evidence from trials that Remdesivir, itolizumab and tocilizumab reduces mortality rate in severely ill coronavirus (COVID-19) patients.

Speaking during a health ministry briefing, ICMR DG Dr. Balram Bhargava said: “There are two drugs which have been thought to be preventing the cytokine storm. One is Tocilizumab and the other is Itolizumab, which are being thought that they can prevent the cytokine storm. Having said that, they have not yet demonstrated mortality reduction by any trial and therefore, trials are wanting, and are happening in different parts of the world, to look at whether there is mortality reduction with these two drugs.”

ICMR had earlier suggested the use of tocilizumab under experimental conditions on patients who need to be externally oxygenated and those who need ventilators but are not benefitting from steroids.

Leading global scientists and vaccine experts call for more innovation in efforts to control COVID-19

ICMR convened a multi-country online symposium on novel approaches in science and ethics of vaccine development, bringing leading vaccine scientists and researchers to a common platform.

The symposium called on countries and scientific institutions to rapidly advance vaccine trials without cutting corners. In addition, experts agreed that all vaccine trials must and can conform to the highest standards of patient safety and ethical norms while exploring fast tracking methods.

Speaking at the symposium the Director of the London School of Hygiene and Tropical Medicine, Professor Peter Piot said, “A vaccine is urgently needed to contain COVID-19. For that we have to work together—bringing science, ethics and communities—to find bold solutions to save lives.”

Prof. K. VijayRaghavan, Principal Scientific Adviser to the Government of India, while opening the symposium said “we cannot afford to let COVID-19 dictate our lives, the scientific community must come together to find a timely solution to this pandemic”.

He highlighted, vaccine development under pandemic conditions is much more challenging than in ordinary times.

“India’s research and development capacity will be integrated into global efforts to address COVID-19” said Dr Anthony Fauci, Director, National Institute of Allergy and Infectious Diseases, USA. He added that when a vaccine is available, India’s private vaccine production sector will have a leading role to play.

“It is possible to think out of the box while adhering to all global standards for vaccine development,” said Dr Stanley Plotkin, Emeritus Professor, University of Pennsylvania, USA. “COVID-19 does not give us the luxury of time, but challenges us to.”

“India has to be at the forefront of global vaccine preparedness,” said Professor Balram Bhargava, Director-General of ICMR. “We are committed to work with the global scientific community in ensuring that a vaccine is available in a timely manner.”

“Vaccines are a global public good and its production and distribution should adhere to global standards of affordability, availability and equity”, said Prof Indrani Gupta Institute of Economic Growth.
ICMR to evaluate effectiveness of BCG vaccine among elders

ICMR is conducting a study to evaluate the effectiveness of the BCG vaccination in individuals between 60 to 95 years of age living in COVID-19 hotspots in India. The study is to evaluate whether the tuberculosis vaccine can prevent the occurrence of coronavirus infection and reduce the severity and mortality of the disease.

The study will be carried out in six sites in Tamil Nadu, Maharashtra, Gujarat, Madhya Pradesh, Rajasthan and Delhi. ICMR’s Chennai-based National Institute for Research in Tuberculosis (NIRT) is leading this research.

The trial will be held on elderly people not affected by COVID-19. BCG is a vaccine against tuberculosis, with protective non-specific effects against other respiratory tract infections in *in-vitro* and *in-vivo* studies. The participants will be administered one dose of 0.1ml BCG vaccine.

World Health Organization endorses Truenat tests for initial diagnosis of tuberculosis and detection of rifampicin resistance

ICMR is thrilled to share the endorsement of its rapid molecular Truenat assays by World Health Organization (WHO) for initial diagnosis of tuberculosis (TB) and subsequent detection of rifampicin resistance in adults and children with signs and symptoms of pulmonary TB.

“This is a matter of pride for ICMR, Department of Health Research (DHR), New Delhi. It was a long journey to advance indigenous diagnostic technologies for diagnosis of TB and MDR/XDR-TB. Truenat is already accepted for use under the NTEP in India. Endorsement of Truenat by WHO will enable other low-and middle-income countries to procure Truenat for diagnosis of TB and rifampicin resistance, thus supporting TB elimination in developing countries,” said Dr Balram Bhargava, Secretary DHR and Director General ICMR.

ICMR conducted multicentre validation of Truenat MTB and Truenat MTB-RIF Dx assays followed by a feasibility study under the national programme and found them to be on par with the internationally recognized Xpert MTB/RIF molecular assay (Cepheid, Sunnyvale, USA) in terms of sensitivity and specificity, and detection of rifampicin resistance. Truenat assays have now been incorporated into the India National TB Elimination Programme (NTEP) after recommendation from ICMR.

A long side endorsement by WHO, the Truenat tests are listed by the Global Fund to Fight AIDS, Tuberculosis and Malaria as eligible for procurement and are also planned to be added to the diagnostics catalogue of the Stop TB Partnership’s Global Drug Facility (GDF).
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.