The above quote aptly conveys the situation we are in and what to expect in future. Since January 2020, the war against the pandemic has been a sustained effort against the fast-evolving nature of challenges that face us. From having a single testing lab to developing a diagnostic infrastructure that has delivered record-breaking results, from isolation and culturing of the original SARS-COV-2, developing indigenous vaccines to identifying mutant strains and testing vaccine efficacy against them, scientific research to find an effective treatment for Coronavirus and for other diseases that have emerged such as black-fungus—we have come a long way.

The second wave of COVID-19 has been devastating for our community. In spite of prevailing pessimism, we have to respond effectively and responsibly.

ICMR has maintained from the beginning that testing is key to containing the spread of the disease. The situation demanded changes in policy that broadened its scope of application and aid in mass COVID screening, particularly in peri-urban and rural settings where health infrastructure is lacking. The use of mobile RT-PCR vans and the amplification of RAT tests are proposed as solutions. It is expected to raise capacity to 45 lakhs (RT-PCR 18 lakh, RAT 27 lakh).

Apart from testing strategy, the past month has seen ICMR release evidence-based advisories, guidelines, manuals on a wide range of topics. One can not underestimate the impact of even the slightest of actions or misinformation. Thus guidance and a well-informed approach can help ease duress under such situations.

While vaccination rollout is steadily gaining ground, other practical solutions for dealing with the pandemic lie in decentralized pandemic response. The approach must focus on three pillars — district-level positivity rate, vaccination coverage, and a bottom-up decision-making process.

As per the WHO, the epidemic should be considered under control, when the positivity average over two weeks is less than 5%. Districts should ensure restrictions and make recommendations accordingly. Secondly, vaccinations among the most vulnerable population groups need to be ramped up. Finally, community participation still remains the key. Covid Appropriate behavior must sustain for longer in order for us to continue making progress and also ensure no progress is lost either.

It is well established that without a unified approach, we risk inadvertently adopting an unfocused approach. We must continue to operate on a war footing and remember that Indians can achieve whatever they set their minds on.

India crossed the milestone of conducting more than 34 crores COVID-19 tests. More than 22 lakh samples tested in a single day.

ICMR has delisted use of convalescent plasma therapy (CPT) in treatment of patients suffering from COVID-19.
Indian Council of Medical Research (ICMR) has been at the forefront of formulating COVID-19 testing strategy in India and crossed the milestone of conducting more than 34 crores sample testing on 28th May 2021, with average testing of more than 19 lakhs plus per day. India has also conducted more than 22 lakh testing, which is the highest per day testing done by any country in the world.

ICMR's concentrated efforts towards augmenting and diversifying testing prepared the infrastructure which made it possible to deliver on India's increased testing requirements in the wake of the second wave of coronavirus. Focus on reducing turnaround time made it possible to conduct the last 5 crores sample testing in only 28 days. As of 30th April 2021 India had tested 28 Crores COVID-19 samples, which reached the 34 crores mark by 28th May 2021. ICMR has been enhancing COVID-19 testing capability across the country by leveraging technology and facilitating innovation in affordable diagnostic kits.

Being a novel virus, India had only one laboratory testing for COVID-19, at the ICMR- National Institute of Virology, Pune in January 2020. The scaling up of testing laboratories started with a network of 117 ICMR-funded Viral Research and Diagnostic Laboratories (VRDLs), which already had the capacity to conduct testing for viruses similar to SARS-CoV-2. Subsequently, the testing was initiated in partnership with multiple governmental and private laboratories. Currently, there are more than 2500 COVID-19 specific laboratories with 1518 RT-PCR, 920 TrueNat, 132 CBNAAT, and seven other Molecular-Nucleic Acid (M-NA) Testing Platforms for COVID-19 in India.

Prof. (Dr.) Balram Bhargava, Director General, ICMR said, “Exponential increase in testing capacity has enabled early identification, prompt isolation & effective treatment of COVID-19 cases ICMR has always promoted innovative and affordable diagnostic solutions in order to increase testing capacity. Testing milestone is testimony to the successful implementation of 5T approach “Test, Track, Trace, Treat and use of Technology” efficiently.”

Ramping up diagnostic infrastructure and promoting affordable kits across India was at the core of increased testing per day. Through ICMR’s ardent efforts, it was ensured that different testing platforms including general testing (RT-PCR), high-throughput testing (COBAS), testing at remotest places, and PHCs (TrueNAT, CBNAAT), in containment areas (Rapid Antigen Testing) were made available.
WHO External Quality Assurance Program underlines reassuring standards of the COVID-19 testing laboratories in India: ICMR

- 95% participating laboratories achieved passing scores in the proficiency-testing panel.
- Proficiency tests (PT) demonstrate lab’s competence in accuracy and correct interpretations of results.
- External Quality Assurance Program is valuable tool to assess the performance of laboratories.

Indian Council of Medical Research [ICMR] has been a proponent of the 5T strategy of Test, Track, Trace, Treat & Technology from the start of the pandemic. ICMR has not only exponentially increased the number of COVID-19 testing laboratories in the country, starting with only one such laboratory at ICMR-NIV, Pune, but has also ensured high standards at various labs for accuracy and correct interpretations of results. This has been validated by ICMR & WHO External Quality Assurance Program, wherein 95% participating laboratories achieved passing scores in the proficiency-testing panel.

In order to assess quality of COVID-19 laboratory in India, ICMR was provided proficiency testing (PT) panels by World Health Organisation-India through the Royal College of Pathologists of Australasia Quality Assurance Programs, Australia. Proficiency tests’ (PT) main objective is to provide independent demonstrations of laboratory competence. 779 laboratories participated in the proficiency test which included 410 government operated laboratories and 369 privately operated laboratories. 739 of these laboratories which are nearly 98% of all participants achieved passing scores in the PT Panel.

ICMR has been aggressively augmenting and diversifying diagnostic capacities by exploring innovative and indigenous methods. Indigenously crafted scientific technology is uniquely placed to best adapt to India’s requirements and for speedy augmentation through public-private partnerships. Currently there are 1518 Real-Time RT-PCR, 920 TrueNat, 132 CBNAAT and seven other Molecular-Nucleic Acid (M-NA) Testing Platforms for COVID-19 testing in India.

India’s diagnostic infrastructure and lab technicians have been under immense pressure under with due to the second wave and have risen to the challenge with grit and determination. We have crossed the milestone of 33 crores and have been sampling above 20 lakh cases per day. This unparalleled feat is a testament to the success story that is India’s testing capabilities at the time of the coronavirus pandemic and a matter of pride for Indians.
ICMR removes Plasma Therapy from Clinical Protocol for Management of COVID-19

- Periodic review of treatments for COVID-19 tilted ‘Clinical guidance for management of adult COVID-19 patients’ published.
- ICMR earlier had published Evidence-Based Advisory to address inappropriate use of plasma therapy.
- PLACID trials have concluded that it is not effective in treatment.

Indian Council of Medical Research (ICMR) has delisted use of convalescent plasma therapy (CPT) in treatment of patients suffering from COVID-19 from its guidelines. ICMR/AIIMS COVID-19 National Task Force has published “Clinical guidance for management of adult COVID-19 patients” on 17 May 2021. This document highlighted protocol in case of mild, moderate, and severe disease.

ICMR had conveyed reservations about CPT as a treatment for COVID-19 previously as well. As per the ICMR advisory on April 22, 2021 CPT was to be considered only when the following criteria were met: Early moderate disease (preferably within 7 days of symptom onset, no use after 7 days) and availability of high titer donor plasma (Signal to the cut-off ratio (S/O) >3.5 or equivalent depending on the test kit being used).

ICMR in November, 2020 had also published Evidence-Based Advisory to address inappropriate use of convalescent plasma in COVID-19 patients. At that time ICMR has stated that it had conducted an open label phase-II multicentre randomised controlled trial in India across 39 public/private hospitals on use of convalescent plasma in the management of COVID-19 disease. It was concluded that CPT did not lead to reduction in progression to severe COVID-19 or all-cause mortality in the group that received CPT as compared to the group that did not receive the therapy.

UK RECOVERY trial with more than 11,000 patients observed that in patients hospitalized with COVID-19, high titer convalescent plasma did not improve survival or other prespecified clinical outcomes. Similar studies conducted in China and the Netherlands have also documented no significant benefit in improving the clinical outcomes of hospitalised COVID-19 patients.

During the coronavirus pandemic, the Indian Council of Medical Research has been constantly monitoring and periodically reviewing medicines and treatment protocols. The objective of publicizing guidelines at regular intervals is to educate the public about the evolving nature of treatments.
ICMR approves India’s first COVID-19 self-testing kit

- ICMR at the forefront of augmenting India’s COVID-19 diagnostic capability.
- Home-testing kits will help reduce burden on existing laboratories.
- Indigenous and affordable methods have helped in effective containment of epidemic situations.

Indian Council of Medical Research (ICMR) has focused on aggressively augmenting and diversifying diagnostic capacities by exploring innovative and indigenous methods. In keeping abreast with this principle, ICMR has approved India’s first self-use Rapid Antigen Test (RAT) for COVID-19.

Self-test kits can potentially be a game-changer in COVID-19 management in India. These can cut queues in laboratories, reduce costs, dissipate the burden on existing manpower for sample collection from homes, and provide results in 15 minutes and people who test positive can immediately isolate so that they do not infect others and quickly contact a healthcare provider.

The self-use test can be used by the individuals themselves and will not need sample collection by a healthcare professional. This will ease pressure on testing labs and reduce delays in testing. Each kit is being provided with all testing materials, instructions to use (IFU) leaflet, and a biohazard bag to safely dispose of after testing. The test is designed to be done using a nasal swab to reduce the discomfort.

For data collection, apps from Google Play Store and Apple Store are mandatory for those conducting home testing. The data in the app of the mobile phone will be centrally captured in a secure server, which will be connected with the ICMR COVID-19 testing portal, where all data will be eventually stored.

Individuals who test positive using the home testing kit may be considered as true positives, and no repeat testing is required. However, home testing by RAT is advised only in symptomatic individuals and immediate contacts of laboratory-confirmed positive cases. Indiscriminate testing is not advised.

ICMR has always encouraged innovative diagnostic approaches that could be cheaper and technologically less demanding than the existing ones to diagnosis COVID-19 cases. Last year, ‘Truelab’ an innovative laboratory-in-suitcase technology, used for diagnostic of Tuberculosis in India since 2018 and also for Nipah virus disease & leptospirosis was modified to make it compatible with COVID-19 testing. Portability and design of ‘Truelab’ make it ideal to work at remote locations and have facilitated deployment of testing facilities in India’s underserved areas. These indigenous and affordable diagnostics methods have helped in effective containment of epidemic situations in diverse countries like India.

Innovative diagnostic approaches that are cheaper and technologically less demanding than the existing ones are being promoted. Efficient use of self-testing kits can potentially be a game-changer in COVID-19 management in India.
ICMR issues advisory for COVID-19 testing during the second wave of the pandemic

- Testing-tracking-tracing, isolation and home-based treatment key for success against pandemic.
- Scale up testing with a focus on Rapid antigen tests (RATs) to meet testing demands.
- Set up dedicated 24X7 RAT testing booths and also create drive-through testing facilities.

Indian Council of Medical Research (ICMR) released an advisory on COVID-19 testing guidelines. The advisory released on 4th May, 2021 is based on changing ground situation, where the laboratories are facing challenges to meet the expected testing target due to extraordinary case load and staff getting infected with COVID-19. In view of this situation, it was imperative to optimize the RT-PCR testing and simultaneously increase the access and availability of testing to all citizens of the country. Advisory can be accessed here: https://www.icmr.gov.in/pdf/covid/strategy/Advisory_COVID_Testing_in_Second_Wave_04052021.pdf

ICMR has emphasized that testing-tracking-tracing, isolation, and home-based treatment of positive patients is the key measure to curb transmission of SARS-CoV-2, the causative agent of COVID-19. It has suggested recommendations on measures to optimize RT-PCR testing, improving access and availability of testing, measures to ramp up testing through rapid antigen test (RAT).

Regarding the RT-PCR test, it has been suggested that it must not be repeated in any individual who has tested positive once either by RAT or RT-PCR. No testing is required for COVID-19 recovered individuals at the time of hospital discharge in accordance with the discharge policy of MoHFW and the need for RT-PCR test in healthy individuals undertaking interstate domestic travel may be completely removed to reduce the load on laboratories.

Further, the use of RAT was limited to containment zones and health care settings, but now it has been suggested to scale up testing with a focus on Rapid Antigen Test (RATs) to meet overwhelming testing demands. RATs have a short turnaround time of 15-30 minutes and thus offer a huge advantage of quick detection of cases and the opportunity to isolate and treat them early for curbing transmission. Testing booths may be set up at multiple locations including healthcare facilities, RWA, offices, schools, colleges, community centers and other available vacant spaces. So far, ICMR has approved 36 RATs of which 10 are on the Government-e-Marketplace (GeM) portal.

The advisory has suggested that symptomatic individuals identified negative by RAT have been asked to be linked with RT-PCR test facility and in the meantime be urged to follow home isolation and treatment. Symptomatic individuals identified positive by RAT should not be re-tested and advised to go through home-based care as per ICMR guidelines.
ICMR releases guidelines for Home Isolation & Care for COVID-19 in 14 regional languages

- Home treatment crucial for the management of the burden on healthcare infrastructure.
- Pictorial representation mentions symptoms, monitoring, treatment of COVID-19 patients.

Coronavirus has manifested itself with varying degrees of severity in patients. The majority of people who are infected with coronavirus experience a mild or asymptomatic disease, which is easily treatable at home. By developing a robust atmosphere for convenient at-home isolation and treatment of the disease, much of the burden can be successfully deviated from the strained healthcare infrastructure.

Indian Council of Medical Research, being at the forefront of public health research to help manage COVID-19 in India released guidelines titled Home Isolation & Care for COVID-19 with support of AIIMS, New Delhi, ICMR/COVID-19 National Task Force and Joint Monitoring Group. This was subsequently translated into Hindi, Assamese, Bangla, Gujarati, Kannada, Malayalam, Tamil, Telugu, Manipuri, Marathi, Nicobarese, Odia, and Punjabi in order to reach a wider audience.

The guidelines through pictorial representation, clearly mention how to look for symptoms, monitoring of COVID-19 patient, their treatment and information on ‘Dos and Don’ts’. It identified fever, sore throat, body ache, headache, cough, breathlessness, loss of smell, and loss of taste as symptoms of COVID-19. It suggested getting a test and consulting the doctor for admission in case of oxygen saturation going below 93%. It further suggests monitoring body temperature and Oxygen saturation.

Under the list of Do’s, it asks patients to isolate and take rest, sanitize hands, ensure cross-ventilation, and for everyone to wear masks at all times. For treatment, consumption of water, juice, soup, and coconut water has been advised along with lying on the chest and breathing deeply to improve oxygenation. Steam Inhalation and/or warm water gargles have been advised and along with multivitamins, paracetamol and cough syrup as per requirements.

The guideline discourages the use of Remdesivir, nebulizer for budesonide, or oxygen cylinder without the advice of a medical practitioner in home care setting. Budesonide via Metered Dose Inhaler (MDI)/Dry Powder Inhaler (DPI) has been listed under treatments in consultation with doctors only if symptoms persist beyond five days. Ivermectin/Hydroxychloroquine low dose steroid is suggested if symptoms persist for more than seven days and antibiotics as appropriate. This document will not only help medical practitioners but also the general public, many of whom are able to deal with the COVID-19 with minimum difficulty in the comfort of their homes.
ICMR releases an evidence-based advisory for Mucormycosis [Black Fungus]

- Guideline focused on nature, symptoms, prevention, and management of the disease.
- Pain, redness around eyes and/or nose, fever, headache coughing, shortness of breath, bloody vomit are main symptoms.
- Patients must not self-medicate with steroids or delay reporting symptoms of the infection.

During the second wave of Coronavirus, several states started witnessing a rise in the number of cases of Mucormycosis (Black Fungus), especially among COVID-19 recovered patients. Mucormycosis is a fungal infection that mainly affects people who are on medication for other health problems that reduce their ability to fight environmental pathogens. The Indian Council of Medical Research (ICMR) released an evidence-based advisory for screening, diagnosis, and management of Mucormycosis. Advisory can be accessed at: https://www.icmr.gov.in/pdf/covid/techdoc/Mucormycosis_ADVISORY_FROM_ICMR_In_COVID19_time.pdf

The advisory extensively covered the topic and shed light on nature, symptoms, prevention, identification of high-risk patients, and management of the disease. Due to the nature of the disease, wherein, if left uncared for, it may turn fatal, it has been advised that after recovering from coronavirus infection, patients or their caretakers should closely monitor and should not miss any warning signs and symptoms, as the fungal infection are found to emerge even weeks or months after recovery.

Symptoms of the disease include pain and redness around eyes and/or nose, fever, headache coughing, shortness of breath, bloody vomits, and altered mental status. Patients with uncontrolled diabetes, on high dose steroids and/or long duration of steroids or tocilizumab, those who had a weakening of immune system due to use of steroids, experienced prolonged ICU/hospital stay, have comorbidities/post organ transplant/cancer or have had Voriconazole therapy (used to treat serious fungal infections) and patients on oxygen support—nasal prongs, by mask, or on a ventilator have been categorized as high risk. Such identification can help to remain vigilant in special cases.

Most importantly, people are advised to continue to wear masks while visiting dusty construction sites or crowded places, wearing shoes, long trousers, long sleeve shirts, and gloves while gardening, and maintain personal hygiene including thorough scrub baths to stave off the infection. The treatment of this infection requires a multidisciplinary approach including the expertise of Microbiologists, Internal Medicine Specialists, Intensivist Neurologists, ENT Specialists, Ophthalmologists, Dentists, Surgeons (maxillofacial/plastic), and Biochemists.

It is emphasized to not miss warning signs and symptoms and people are encouraged to shed hesitation and seek aggressive investigations, as appropriate (KOH staining & microscopy, culture, MALDI-TOF), for detecting fungal etiology even if the slightest symptoms show. Patients must not self-medicate with steroids or delay reporting symptoms of the infection.
Indian Council of Medical Research has broadened the scope of its role as a guidance provider and has stepped up to the challenges posed by this unprecedented pandemic. Healthcare professionals fighting on the frontlines in this pandemic often find themselves as the unfortunate bearer of bad news for distressed families. In view of the psychological challenges facing the healthcare professionals and bereaved family members, ICMR issued a guidance document to aid difficult conversations and to minimize adverse reactions.

The Manual for “Health Care Professionals” in providing “Psychosocial Support” to family members in bereavement in the time of COVID-19 aims to help clinicians from various departments such as ID ward, critical care, intensive care units, high-risk wards where severe COVID-19 patients are admitted, bereaved family members. The guidelines assist clinicians in three ways:
1. Disclosing the news of death to the family; 2. Providing immediate psycho-social (incl. emotional) support to the family members of the patients with COVID-19; 3. Helping health care professionals to cope with their own emotional reactions.

One of the key objectives of such guidelines was to disseminate it among as many Health Care Workers (HCWs) as possible to facilitate current interventions geared towards achieving optimal psycho-social care. The manual includes specific guidelines to address unique issues while delivering any form of intervention. Due to the nature of the disease, health care professionals wear Hazmat Suits which hinder communication and disallow displaying any form of non-verbal communication that facilitates the grief process. It includes topics like preparing family members for the possibility of the worst outcome due to COVID-19, Breaking Bad News, Facilitating the Grief Process in Family Members, and Practicing Self-Care. Each dimension has been explained in each chapter with enough examples to promote comprehensive understanding and application of the interventions outlined.

As per the manual, health care professionals have been advised to follow the intervention techniques mentioned in the guidelines in their current practices. However, in situations, whenever they feel overwhelmed or unable to deal with the stress themselves, they have been advised to consult mental health professionals.

- Manual suggests how to provide psychosocial support to bereaved families.
- Hazmat suits hinder verbal and nonverbal communication.
- Health Care workers advised practicing self-care.
ICMR is available on Facebook, Twitter and Instagram. For latest update about COVID-19 and other medical research breakthroughs, you can follow ICMR’s Official handles.