The spike in COVID-19 cases and fatality seems to be in continuum across the world. A number of countries have seen flattening of curve at various points during the last nine months of the pandemic prevalence. However, recently we have seen second wave strike in some of these countries. All countries including India are using various interventions, but as yet there are no clear indications as to when it will end. However, one thing is clear that global collaboration and innovation is going to be the cornerstone of a strategy that can potentially end this pandemic. India has demonstrated this through effective implementation of strategy for testing and vaccine development.

ICMR recently achieved a milestone in conducting cumulative 10 crores COVID-19 sample testing, with last 5 crores testing done in only 45 days. This was enabled by swiftly establishing testing infrastructure and capacity across the country. Exponential increase in COVID-19 testing has enabled us to limit spread of corona virus. But it is clear that we need to fast track development of potential vaccine against COVID-19. Thankfully, there has been promising results on these fronts, and we are hopeful that a vaccine could be well on its way. Trials of indigenous vaccine candidate are also at advance stage of development.

ICMR backed Bharat Biotech Limited vaccine candidate “COVAXIN” has entered the third phase of clinical trials. Zydus Cadila’s “ZyCoV-D” and “ChADDOx1” vaccine jointly developed by Serum Institute of India and University of Oxford have shown promising results. Not only in India, but globally 44 vaccine candidates are in different phases of clinical trials. No matter when and where a vaccine is developed, India is bound to play a pivotal role in its production and distribution across the world. Further, during the last nine months of this pandemic it has become clear that global co-operation and innovation alone will enable countries to come out of this situation.

Partnerships and collaboration — such as the Grand Challenges India, World Health Organization’s solidarity therapeutics trials — are playing a crucial role in accelerating research, developing new tools, and driving continued progress in tackling the COVID-19 pandemic. Prime Minister Shri Narendra Modi has also emphasized that the future will be shaped by societies that invest in science and innovation and the journey to this innovation must be shaped by collaboration and public participation.

Despite the ongoing challenges that the pandemic has thrown up, we are hopeful to find a conclusive answer to all vital question. We need to forge long-term partnerships and increase R&D investments as that will determine the scientific tools at our disposal to defeat this pandemic.
Milestone of 10 crores COVID-19 sample testing achieved: ICMR

- Last 5 crores COVID-19 samples tested in a record time of 45 days.
- More than 74000 tests per million populations.
- Total number of COVID-19 testing laboratories has crossed 2000.

Indian Council of Medical Research (ICMR) has yet again achieved a milestone in conducting record COVID-19 sample testing. India crossed 10 crores testing mark on 23rd October, 2020 with last one crores testing done in only 9 days. With this India has conducted more than 74000 tests per million populations, which is a remarkable achievement for any nation, which started with minimal testing infrastructure and capabilities.

It took almost 158 days to reach first one crores sample testing mark but in next 108 days India has conducted more than 9 crores sample testing. This has been enabled by rapidly increasing testing infrastructure and capacity across the country. Apart from creating testing infrastructure ICMR has been leveraging technology and facilitating innovation in affordable diagnostic kits.

On this achievement Prof (Dr) Balram Bhargava, Secretary DHR & Director General, ICMR said, “This testing milestone is testimony to the fact that India has been successful in implementing strategy of 5T approach “Test, Track, Trace, Treat and use of Technology” efficiently. We have effectively responded to the evolving epidemic through focused and collaborative efforts of the Centre, State/UTs government. Exponential increase in testing has led to early identification, prompt isolation & effective treatment of COVID-19 cases along with effective contact tracing.”

India has conducted total of 9 crores COVID-19 sample testing in only 108 days. The total number of diagnostic laboratory has crossed 2000.

Ramping up of testing facility was at the core of increased testing per day. Through ICMR’s ardent efforts, it was ensured that a specific testing platform is made available addressing general testing (RT-PCR), High-throughput testing (COBAS), testing at remotest places and PHCs (TrueNAT, CBNAAT), in containment areas (rapid antigen testing) and for large number & migrant population testing (pooled sample testing). The total number of diagnostic laboratory has crossed 2000.
ICMR backed Indigenous Vaccine ‘COVAXIN’ gets Approval for Phase-III Trials

- DCGI permits Bharat Biotech Ltd to conduct phase-III clinical trials.
- Third phase will involve large-scale efficacy trial involving thousands of volunteers.
- Phase-III clinical trials are crucial as it will assure of vaccine safety and efficacy.

India’s indigenous COVID-19 vaccine candidate ‘COVAXIN’, which is being developed in collaboration with Indian Council of Medical Research (ICMR) and Bharat Biotech International Limited, has got approval for third phase of trials. Drugs Controller General of India (DCGI) has permitted Bharat Biotech limited to conduct phase-III clinical trials of ‘COVAXIN’ with certain conditions.

Phase I/II trials of ‘COVAXIN’ has been completed and related data will be submitted to the Clinical Trials Registry India (CTRI). Phase I/II vaccine trials is designed to evaluate the safety, reactogenicity, tolerability, and immunogenicity of healthy volunteers, who received doses of vaccine formulations. These trials had a total sample size of 1125 healthy volunteers, with 375 volunteers in the phase-1 and 750 volunteers in phase-II study. In third phase it will now involve large-scale efficacy trial involving thousands of volunteers.

‘COVAXIN’ has been categorized as an inactivated vaccine. It means that the virus pathogen is ‘deactivated’ to disable it from causing infection. However, some parts of the virus can be identified by the immune system, leading to an immune reaction. Hepatitis A, influenza, and polio vaccines used in India are some examples of inactivated vaccines.

Apart from ‘COVAXIN’ the other vaccine candidate are Zydus Cadila “ZyCoV-D” which is in process of receiving approval for conducting third-phase clinical trials. The other vaccine candidate “ChADOx1” jointly developed by the Serum Institute of India (SII) and University of Oxford has recently started third phase trials. ICMR is also helping SII in clinical trials as second sponsor agency. The data from phase-III clinical trial are very crucial as outcome from this will assure vaccine’s safety and efficacy.

‘COVAXIN’ phase-III will involve large-scale efficacy trial involving thousands of volunteers. Phase-3 clinical trials are crucial as it will assure of vaccine safety and efficacy.
ICMR co-hosts the Grand Challenges Annual Meeting 2020

- Prime Minister addressed the inaugural function of Grand Challenges Annual Meeting 2020.
- Innovative ideas will help solve the most complex global health & development problems.
- Almost 1600 people from 40 countries participated.

The Grand Challenges Annual Meeting 2020, which promotes international innovation collaborations to address the biggest challenges in health and development, held virtually from 19th to 21st October, 2020 in India. The three-day virtual program brought together world leaders, eminent scientists and researchers from across the globe, who called for deepened scientific collaborations in solving global health problems, with special focus on COVID-19 pandemic.

Indian Council for Medical Research (ICMR) was a co-hosts along with Department of Biotechnology, Ministry of Science & Technology, Government of India, NITI Aayog and Gates Foundation. It was supported by the Grand Challenges Canada and the United States Agency for International Development.

While delivering the keynote address, Prime Minister Shri Narendra Modi emphasized that, “The future will be shaped by societies that invest in science and innovation. But this can’t be done in a short-sighted manner. One has to invest in science & innovation well in advance, that is when we can reap benefits at the right time. Similarly, the journey to this innovation must be shaped by collaboration and public participation. Science will never prosper in silos.”

On this occasion Prof (Dr) Balram Bhargava, Secretary DHR & Director General, ICMR said, “India’s response to COVID-19 was proactive, pre-emptive, graded & calibrated. We successfully implemented ‘5T policy’ - test, track, trace, treat and use of technology. For tackling the pandemic the world’s greatest minds from governments, multilateral institutions and civil society need to come together. COVID-19 is an opportunity for India to invest in health infrastructure, health manpower so that we can take care of the challenges in India and also of the world.”

Grand Challenges India was set up as a partnership of the Department of Biotechnology, Government of India and the Bill & Melinda Gates Foundation in 2012. Grand Challenges India works across a range of health and developmental priorities ranging from agriculture, nutrition, sanitation, maternal and child health to infectious diseases.
ICMR successfully conducted World Health Organization’s Solidarity Trial on COVID-19 therapeutics in India

- Solidarity therapeutics trial was world’s largest global randomized controlled trial for COVID-19 therapeutics.
- India contributed one tenth of the participants in the trial.
- Interim analysis showed no benefits of Remdesivir and other 3 drugs in treatment of COVID-19.

Indian Council of Medical Research (ICMR) has successfully conducted World Health Organization’s solidarity therapeutics trials in India. These trials were coordinated by Dr. Sheela Godbole scientist ‘F’ from ICMR-National AIDS Research Institute (NARI), Pune at national level. WHO’s solidarity trial is the world’s largest global randomized controlled trial in a pandemic situation for COVID-19 therapeutics. The trials were conducted through March 22 to October 4, 2020 and followed 11,266 patients in 405 hospitals, spanning 30 countries. India contributed one tenth of the participants in these trial.

WHO recently revealed interim results of the trials, which tested four repurposed drugs, Remdesivir, Interferon β1a, Lopinavir/Ritonavir and Hydroxychloroquine. Interim analysis has shown no benefits of Remdesivir in any groups of COVID-19 (asymptomatic/mild/moderate/severe/critical) patients.

Dr Samiran Panda, Head, ICMR Division of Epidemiology and Communicable Diseases (ECD) and Director, ICMR-NARI said, “The trial comprised 26 actively randomizing sites with 937 participants in India. These trials were very challenging, particularly as it was done during the strict lockdown phase. We are grateful to the trial participants and their families for contributing to these crucial findings.”

ICMR has succeeded in conducting this large randomized controlled study even during a pandemic situation and earlier lockdown. This study reliably answers critical public health questions concerning therapeutics. Earlier, ICMR conducted PLACID trial for convalescent plasma indicating no benefit of it in COVID-19 treatment.
ICMR gets approval for clinical trial of equine sera as possible therapy for COVID-19

- ICMR is developing the equine sera in collaboration with the Biological E. Ltd.
- Successfully completed the animal testing of equine sera.
- Similar measures used in medical science to control viral and bacterial infections in the past.

Indian Council of Medical Research (ICMR) will soon start clinical studies for developing equine sera containing antibodies against COVID-19, as a potential alternative to plasma therapy. ICMR has received permission from DGCI to conduct human trials after successful completion of the animal testing of equine sera, which is blood plasma obtained from horses that have recovered from COVID-19.

ICMR in association with Biological E. Ltd has developed highly purified antisera (raised in animals), which is basically blood serum high in antibodies against specific antigens and are injected in humans to help kickstart the immune system to fight specific infections. Antisera effectiveness will be tested for prophylaxis and treatment of COVID-19.

Recent study provides evidence of generating highly purified antigen-binding fragment from equines against SARS-CoV-2 that can demonstrate consistent and high neutralization activity. Further, in-vivo testing for efficacy of this indigenously developed, cost effective product will pave the way to clinical evaluation. Moreover, being a donor independent method, this may prove as an efficient alternative to convalescent plasma for treatment of COVID-19 patients.

The principle behind using equine sera is similar to that of plasma therapy, that is, to artificially introduce antibodies against a virus when the body is unable to produce a robust immune response on its own. Such measures have previously been used in medical science to control many viral and bacterial infections such as Rabies, Hepatitis-B, vaccinia virus, Tetanus, Botulism and Diphtheria.

In a recent research, ICMR found that plasma recovered from patients experiencing COVID-19 has varying profile of antibodies, efficacy and concentrations, which makes it unreliable as a clinical tool for patient management.

ICMR in association with Biological E. Ltd developed highly purified blood serum antisera. Antisera effectiveness will be tested for prophylaxis and treatment of COVID-19.
India and US to collaborate in Health Research on infectious diseases

- MoU to be signed between ICMR and NIAD/NIH to collaborate on infectious diseases research.
- The Ministers applauded the cooperation in areas of health research.
- Both countries agreed to convene the India-U.S. Health Dialogue at the earliest.

India and the United States have committed to strengthen their collaboration in health research, focused on infectious diseases including COVID-19. In a joint statement issued on the third India-U.S. 2+2 Ministerial Dialogue held on 27th October, 2020 after meeting of Minister of External Affairs Dr. S. Jaishankar and U.S. Secretary of State Michael R. Pompeo. The Ministers agreed to strengthen collaboration between Ministry of Health and Family Welfare and the U.S. Department of Health and Human Services (HHS) to enhance health cooperation, including on health emergencies and pandemics, prevention, diagnosis and treatment of communicable and non-communicable diseases, and biomedical research and innovation.

The Ministers looked forward to the signing of the Memorandum of Understanding between the Indian Council of Medical Research (ICMR) and the U.S. National Institute of Allergy and Infectious Diseases (NIAD/NIH) to collaborate through an International Center of Excellence in Research focused on infectious diseases including COVID-19. Further, both sides welcomed the upcoming call for clinical research fellowships applications for early and mid-career Indian and American scientists to help expand the cohort of physician scientists focused on research that will advance clinical practice and benefit public health in both countries.

The Ministers sought to jointly promote access to high quality, safe, effective and affordable COVID-19 vaccines and treatments on a global scale. Ministers also reiterated their resolve to strengthen cooperation in COVID-19 therapeutics, diagnostics, ventilators and other essential medical equipment. Both sides agreed that bilateral engagement in the research & development and the mass production of vaccines and therapeutics should play to respective strengths. Noting the importance of health sector cooperation, they also looked forward to convening the India-U.S. Health Dialogue at an early date.
Indian Council of Medical Research [ICMR] organized a webinar on “Gandhi’s perspective in relevance to health crisis” to commemorate the second year of Gandhi’s 150th birth anniversary on 2nd October, 2020. On this occasion, an e-photo album with Gandhi’s quotes and a compendium of initiatives undertaken by ICMR in collaboration with National Gandhi Museum during the last two year was also released.

Padma Shri Dr. Abhay Bang, Director, Society for Education, Action and Research in Community Health (SEARCH), delivered a talk on “What would Gandhi do faced with today’s crisis?” He highlighted the Mahatma Gandhi’s life teachings and emphasized Gandhian values of freedom from fear, caring for the sick, “Swa-dharma” and “Aarogya Swaraj” for dealing with corona virus like health crisis. National Gandhi Museum, Director Mr. A. Annamalai also participated in the webinar. He congratulated ICMR for its “Gandhi & Health@150” initiative over the past two years to promote Gandhian philosophy of health.

Speaking on the occasion, Prof. (Dr.) Balram Bhargava, Secretary DHR & Director General, ICMR said, “Mahatma Gandhi has spent his life promoting the message of preventive health to the masses. In today’s unprecedented time, there is no better person who could lead us out of this. Taking cue from his messages, we should follow the preventive measures like physical distancing (do gaz ki doori), use of masks at public places, maintaining hand hygiene, following coughing and sneezing etiquettes that are the most effective ways to keep this dreadful virus at bay. Following them conscientiously will be a prominent way to foster ease of living in COVID-19 times.”

ICMR has taken various initiatives in last two years to commemorate Mahatma Gandhi’s 150th birth anniversary. A collector’s edition of the Indian Journal of Medical Research (IJMR) in two languages (Hindi & English) has been released. Apart from this two-day symposium was organised to bring together the Gandhian scholars as well as public health professionals for cross pollination of ideas and inspiration towards innovative applications of Gandhian philosophy in the area of health. ICMR also took Gandhi’s teachings on health to schools through its innovative Mission SHAKTTI (School-based Health Awareness, Knowledge, Test & Training Initiative) programme.
ICMR- RMRC, Bhubaneswar Director conferred with Prestigious Samanta Chandra Shekhar Award

Dr Sanghamitra Pati, Director & Scientist ‘G’ ICMR- Regional Medical Research Centre, Bhubaneswar was conferred with prestigious Odisha Bigyan Academy’s Samanta Chandra Shekhar award 2018 for her outstanding research contribution in the field of science. The award is given by the Science and Technology Department of the Orissa Government.

Dr Pati is an expert on multimorbidity research in public health. The burden of multimorbidity in primary care, psychiatric multimorbidity, patient-physician perspectives on the burden of multimorbidity, mapping of multimorbidity in medical education, and inter professional education related to multimorbidity have been her areas of research.

The Regional Medical Research Centre (RMRC), Bhubaneswar in engaged in basic as well as applied research to understand and develop prevention strategy for diseases of regional importance like lymphatic filariais, malaria, diarrheal disorders, tuberculosis, HIV/AIDS, emerging and re-emerging bacterial/viral infections and health problems related to tribal populations.

ICMR issues advisory for use of CRISPR technology based COVID-19 testing

Indian Council of Medical Research (ICMR) has issued an advisory for COVID-19 testing kits based on the genetic editing tool CRISPR. This technology uses gene-editing to identify and target the genetic material of SARS-CoV2, the virus that causes COVID-19. While the RT-PCR test takes almost 24 hours to deliver results, the CRISPR technology based test can do so within around 45 minutes. Further, it requires only a basic PCR machine, unlike the RT-PCR that requires an advanced machine.

According to the advisory, no further RT-PCR based confirmation is required for samples that are confirmed as positives or negatives. Specimen collection and transfer of sample for the test must be performed using appropriate personal protective equipment and testing should be carried out under appropriate biosafety (BSL2 level) precautions, following the standard RT-PCR guidelines.

The advisory also allows existing ICMR approved government and private laboratories for SARS-CoV-2 RT-PCR based testing to be used for this new testing. No further approval would be required from ICMR for starting the test in existing laboratories.
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.