**EDITORIAL**

# Combating COVID-19 with Proficiency and Precision

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## Introduction

It has been two years since the first case of Coronavirus Disease-2019 (COVID-19) was detected in India in the state of Kerala in March 2020. (1) The Government and the citizens of India have united together to combat the virus since then. India is the largest democracy in the world and the second highest populous country with an estimated 1.36 billion population. The country has witnessed three major waves of the COVID-19 pandemic in the past 3 years, the second being the worse. In the month of June 2022, India has reported a cumulative total of approximately 4.34 crore confirmed cases of COVID-19 and 511,903 deaths. The state of Maharashtra has been the worst effected in all three waves. Presently the recovery rate from COVID-19 in India has crossed 98%. (2)

## COVID-19 crisis in India

The first wave in India started in March 2020, achieved a peak in September 2020 with more than 90,000 confirmed cases/day, and gradually decreased in intensity with 10,000 confirmed cases/day in February 2021. The main focus during the first wave was the flattening of curve that is the epidemic curve reaching a plateau.(3) The second wave of COVID-19 in India with the Delta Variant of SARS-CoV-2 had severe consequences in the form of spiraling cases, reduced supplies of essential treatments, and increased deaths particularly in the young population. (4) This wave of COVID-19, which began in February 2021, had hit India very hard with the daily cases reaching nearly triple the first peak value as on April 19, 2021, and the country just was slightly away from touching the 5 million daily case mark. (5)

The country faced the third wave caused by the new strain Omicron which started in the last week of Dec 2021 had a sharp rise and declined gradually by the end of February 2022. The doubling rate of the Omicron wave was 2 days approximately, but the severity of infection and related mortality was much lesser than the previous 2 waves.(6)

## Strategies to combat COVID-19 and the way forward

The principles of COVID-19 resilience planning in India mainly focuses on Health system strengthening, development of surge capacity and development of an intersectoral response plan. Consolidating the lessons learnt/best practices from each wave and bridging the health system gaps have helped in operational research and innovations to tackle the pandemic. The following strategies have been designed and followed by the GOI in its initiative to combat COVID-19-

**1.  Coordination and Intersectoral response plan**
Government of India is working closely with the Ministry of Health and Family Welfare (MoHFW), National Centre for Disease Control (NCDC), Indian Council for Medical Research (ICMR) and National Disaster Management Authority (NDMA) at the national level and supporting through task force/control rooms at the state and district level in Andhra Pradesh, Karnataka, Kerala, Tamil Nadu, Telangana, and Puducherry. WHO field offices continue to participate in meetings on current response, vaccination; chaired by Chief Ministers, Health Ministers, Chief and/or Health Secretaries, National health Mission (NHM), etc. (7)

**2.  Promoting COVID Appropriate Behaviour**
The main focus during the first wave was the flattening of curve that is the epidemic curve reaching a plateau. Along

with implementation of global and national lockdown, early tracing of variants, maintaining strict preventive COVID appropriate behaviour like wearing a face mask, frequent use of hand sanitizers, maintaining social distance of at least six feet, increasing the number of tests/day, ensuring the availability of test kits, performing timely serosurveys were found helpful to restrict the spread. Intense IEC activities, civic responsibility and implementation of regulations was done to make sure COVID appropriate behaviour was followed at all times.(8)

**3. Containing Transmission- Surveillance, Quarantine and Isolation**

When the pandemic started, containment and isolation was the only resort to slow down spread of the virus. The Central and state task forces continue to provide technical support for COVID-19 containment activities in various states; including providing of supportive supervision to monitor contact tracing; identify containment zones and sharing regular feedback. There is also support provided for house-to-house survey for ILI/SARI. There is technical assistance given to states for conducting sero-surveillance.(9)

**4. COVID-19 Vaccination**

India is running the World's largest vaccination drive against COVID-19 since 16th January 2021 and presently 2 billion people have been vaccinated against the deadly disease. The major two vaccines that have been administered in India are the Covishield and Covaxin Vaccines. The GOI has developed a real time COVID-19 Vaccine Delivery Management System for real time tracking of stock and temperature through the Electronic Vaccine Intelligence Network. (eVIN). Real time recording of vaccination event is done by COVID Vaccine Intelligence Network (Co-Win) portal.(10)

Co-Win is a scalable, inclusive, inter-operable and open platform for Universal Vaccination by 2022. It was developed for equitable vaccination across multilingual states, with multiple modes for registration to ensure accessibility for all. It ensures unbiased distribution of vaccines through a single source of data to remove information asymmetry and align stakeholders. It is capable of evolving and accommodating changes as per circumstances, built for a scale of a billion plus citizens. Data on vaccination and recording of AEFI helps form data-driven public health policy and evaluate the efficacy of different vaccines.(11)

**5. Augmentation of Oxygen Supply and Ventilatory Support**

To fast-track the availability of Medical Oxygen in Health facilities, an IT enabled Management Information System called OxyCare has been developed to track each oxygen device for providing better services to the patients. As of now, Oxygen Concentrators (OCs) and PSA Plants are being monitored using this system. Secure QR Code has been placed on each Oxygen Device, which is read by mobile app to facilitate various tasks in secure and fast manner. OxyCare Management Information System (OC-MIS) has been empowered with allocation, distribution, supplies, receipt, installation, maintenance, online monitoring of purity, flow and pressure in case of PSA Plants.(12)

A panel, called the Empowered Group 2 (EG 2) under the Prime Minister's Office, is monitoring the oxygen supply. The EG 2 has members from all states, major oxygen manufacturing firms and departments involved in transport. A total of 850 oxygen plants are being set up in various districts of the country from PM Cares Fund for catering to the needs of the country to fight the pandemic COVID-19. (13)

**6. Strengthening Telemedicine**

The Implementation of Telemedicine in India is approved by National Medical Council (NMC). On 9 August 2020 the Government of India introduced its telemedicine service, eSanjeevani, as part of its 'Digital India' initiative. The platform currently permits two types of telemedicine services: Doctor to Doctor (eSanjeevani) and Patient-to-Doctor (eSanjeevani OPD). It is based on a "hub and spoke" model. Medical college hospitals and large government hospitals in the States act as 'hubs' to provide tele-consultation services to 'spokes', or primary health care centres.(14)

**7. Strengthening of Existing Infrastructure- Graded Response in case of upcoming waves**

A draft has been created regarding the colour coding alert where in based on various parameters the strategies that shall be implemented in case of a rise in the number of COVID cases, has been divided into 5 levels, Level 0 to Level 4. Each of these levels have been awarded a different colour coding. This shall be a useful aid in deciding when to implement Standard Operating Procedures (SOPs) along with CAB. Presently the element of the framework to be used by States & UTs to facilitate decision making at the district level is based Test positivity of 10 % or more in last one week or bed occupancy of 40% or more on oxygen supported or ICU beds. (15)

**8. Additional Strategies**

Containment measures like the imposition of night curfews, strict regulations on large gatherings, restricted numbers in offices, industries, public transport. Testing and surveillance strategies like door- to- door case search, testing of vulnerable, comorbid and ILI cases, ensuring right proportion of RT-PCR tests in total tests being conducted daily. Strengthening clinical management, increased bed capacity, ambulances, mechanism for seamless shifting of patients, availability of oxygen equipment's, and ensuring buffer stock of drugs. Ensuring 100% coverage of left out first and second dose eligible beneficiaries in accelerated manner. Activation of war rooms/call centers and keep analyzing all trends and surges, no matter how small and keep taking proactive action at the district /local level. (16)

## Conclusion

With the advent of Omicron as the new dominant strain in India, strategies and SOPs also need to be updated. The roadmap ahead is to have a look at the complementing opportunities of different organizations as each association is a strong pillar in itself. The need of the hour during Pandemic and times to come has been to sensitize the government & National Institution for Transforming India (NITI) Aayog about creating taskforces and strengthening existing infrastructure. The education system of the country has also been affected miserably and it should be an imperative of the government to innovate and implement strategies to make up for this loss.(17)

The GOI has also started the administration of Precaution dose of COVID-19 vaccine as a booster dose to all Healthcare workers and elderly aged above 60 years. (18) While many privileged nations have resorted to booster vaccines as a strategy to control the spread of this variant, the utility of this strategy is debatable.

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