COVID 19 RECOMMENDATIONS FOR INDIA

Prepared by ASCI and FICCI

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1 BACKGROUND AND RATIONALE

The second wave of COVID 19 have been experienced in all major States and Union Territories in all states from mid-February 2021. The health system has taken a due to the increased COVID active cases and increase in Hospitalizations. There were shortages of Oxygen, beds and essential COVID drugs. The Bhramar Mukherjee COVID study and Institute of Health Metrics and Evaluation predicted that there would be 8-10 lakhs daily cases per day and around 4500 deaths per day (worst case scenario). Based on current estimates the number of daily cases is around 3 lakhs daily cases and deaths around 4000 per day. Niti Aayog has predicted a third wave even if the second wave tapers off in the next few months. In this context this study is an attempt to provide actionable recommendations for tiding over COVID 19 and provide best practices which will be helpful for our country.

2 SCENARIOS OF COVID SECOND WAVE

The recommendations are being provided assuming three scenarios that the daily new cases would be 3 lakhs (currently due to lock down impact), 6 lakhs daily new cases (as predicted by few studies based on Sutra model) and 9 lakhs new cases (Bhramar Mukherjee study) in the future.

3 COVERAGE OF STUDY

The study focusses on four major areas of COVID 19 pertaining to second wave. They include:

1. COVID Treatment management
2. Supply Chain Management
3. Data Management and
4. Media Outreach

4 DISCLAIMERS

Newer innovations in COVID 19 are adopted on a daily basis by the Centre as well as in the states; all information collected till May 25th, 2021 have been included in the report. Vaccination is being done nationally and since its already going on, major recommendations and best practices pertaining to the same have been excluded from the purview of the report. We believe that speed of vaccination will reduce the new cases to the lower levels.

5 KEY ASSUMPTIONS OF COVID 19

1. COVID funds from Government will be in short supply.
2. The civil society, private hospitals must take an active role. Government to acknowledge and encourage private initiative rather than control it.
3. We presume that Lockdowns can only delay the spread but cannot prevent it, based on our wave 1 experience.
4. The Indian variant is very virulent and is expected to infect majority of population according to some studies and is now very active in rural India. Hence prevention focus is not enough.

5. Early detection – with extensive testing and fast and accurate results – and shifting of patient to COVID centers is the only way to prevent the entire family getting infected. Communication to family members hence has become very important.
6. The action must shift to treatment and treatment infrastructure capacity – at home. COVID centers and hospital infra and associated consumables like Oxygen and drugs
7. Rural treatment infra is very important in this wave compared to urban infra in the first wave.
8. Mass and daily communication in vernacular media has become very important.
9. Private individual and corporate contributions through CSR have to be filled in the shortage of government funds.

6 KEY RECOMMENDATIONS

6.1 COVID TREATMENT

1. **Encourage Home and secondary COVID Care and prevent direct hospitalizations.**
   - AIIMS must publish Detailed day wise guidelines for patient and family during home quarantine. The guidelines must cover medicines, daily monitoring requirement, food and nutrition and escalation conditions. This has been followed by countries like Liberia. States like Telangana and Tamil Nadu (by CMC Vellore) had come up with similar COVID guidelines.
   - Set up with NGO help, COVID counselling call centres with recovered patients as mentors: States like Karnataka have taken the help of NIMHANS to facilitate psychological counselling. Turkey made it mandatory for recreational activities during home quarantine.
   - Set up an exclusive integrated App to provide real time Patient support which will connect patient to all resources in one App – food, doctors, medicines, secondary COVID care centre, ambulance etc and daily communications on home care by designated experts - through vernacular TV would be extremely important for those under home quarantine.
2. **Create large numbers of secondary care centres in each district under private management.**
   - Encourage subsidized secondary COVID care centers with oxygen facility, doctor care, basic medicines, ambulance for pick up and drop to hospitals. Each COVID care center must be tied up with a hospital. Set up private secondary care centers in each district at Mandal/Block level with private and trust management - in large private schools (schools under summer vacation) or low-cost hotels with tie up to hospitals. Tamil Nadu has led this initiative remarkably where a lot of private schools in Kumbakonam, Chennai etc. have been converted into COVID care extension centers. Incentivize funding from corporates and individuals – through tax and CSR benefits.
   - Communicate that movement to the secondary centers are essential to prevent family getting infected; This has been done successfully in few districts in Maharashtra. To provide confidence to poor patients – subsidize, provide free oxygen facility, adequate health manpower and referral transport and automatic admission to “tied up” hospitals.
   - The Government should encourage such initiatives with legislative protection for promoters of the secondary care centers and provide security against any untoward incidents. Open areas inside Army cantonment areas, open plots inside PSU compounds and railway owned areas should be made available for creating secondary care centers

in urban areas. The Army, DRDO, Railways etc. have already committed to helping the government.

- Ensure adequate manpower by adding BDS and Ayush doctors in secondary care centers. This was done in states like Delhi, MP, Uttarakhand etc.

6.2 Tertiary Care

1. To prevent exorbitant and uncontrolled hospital bills, government to announce COVID packages for each co-morbity like Heart operation packages. This will cap the bills: States like Kerala and Maharashtra have created packages for COVID treatment across different types of hospitals.
2. Hospitals must be made responsible for maintaining adequate inventory of all COVID medicines and consumables. Insist on hospitals to permit medicines from outside their pharmacy – to replace the hospital medicines. This will give opportunity and for patients to buy medicines at government announced prices.
3. Create a web site/ App for publication and comparison of hospital bills to publish the bills: COVID related packages still can be brought under all.
4. Government sponsored Insurance schemes for the benefit of BPL population and those who cannot afford the costlier insurance schemes like 'Kavach'. Many states like AP Telangana have included COVID treatment under PM-JAY Ayushman Bharat scheme. The entire insurance packages to be made cashless. And IRDA must set up a call center to receive complaints.
5. Bed Management to be streamlined; Panel of Medical experts to decide on the guidelines based on existing medical condition like Oxygen level, infection rate etc. Singapore had successfully done this prioritization so that emergency patients receive the beds first.
6. Frontline health workers to be incentivized (both financial and non-financial) to motivate them; Incentives like advance salary, additional salary, COVID treatment.
7. facilities were implemented by many states like Odisha, Telangana, Tamil Nadu, Karnataka etc.

7 Recommendations to COVID 19 Supply Chain Management

7.1 Procurement, Pricing & Safety of Oxygen Concentrators

1. Cargo flights should be sent to import friendly nations for procuring oxygen concentrators.
2. 'Oxygen concentrator banks' should be created wherefrom the patients in home isolation can borrow.
3. Already set-up 200 oxygen concentrator banks in all centers of Delhi – Provided free of cost.
4. A regulatory mechanism should be put in place to control prices of such medical devices.
5. Every hospital should be asked to submit a "double back-up" plan required for Oxygen.
6. Due to explosion risks, Oxygen should not be instituted in Hospital.

7.2 Oxygen Storage & Supply

1. The govt. should draw long-term plans and build the capacity of oxygen storage on a large scale.
2. Steps should be taken to explore the creation of "Oxygen National Grid".
3. Maintenance of all oxygen concentrators should be given to a single party.

4. IOCL should play a pivotal role not just in strengthening supply-chain of oxygen but also in building India's long-term liquid oxygen storage capacity.
5. IOCL converted 29 unused LNG tankers into medical-grade oxygen carriers; contributed to India's available Cold Chain Equipment
6. IOCL in convergence with Ministry of Road Transport & Highways, oil companies and other central & state agencies should monitor allocation, dispatch, and receipt of oxygen.
7. Convergence and Collaboration of Kerala State with PESO

7.3 Rationale and Efficient Utilization Of LMO

1. The govt. should fix some standard or benchmark for rational and efficient use of Oxygen depending upon the oxygen saturation levels.
2. Govt. of Maharashtra has decided to fix the PMF depending on criticality level; The "California Model": The state administering the "minimum amount of oxygen necessary."

7.4 Provision of Pulse Oximeters

1. The Govt. should provide oximeters to all patients recovering from home isolation.
2. Manipur, Delhi, Karnataka provide free oximeters to all patients recovering from home isolation.

7.5 COVID Pharmacies:

1. COVID pharmacies can be set up by the government to help common people with essential medical supplies that includes medical drugs, oxygen, masks & cylinders.
2. Followed by Tamil Nadu & Karnataka

7.6 Ambulance Services:

1. Ambulance charges should be capped & charges should be fixed on basis of life-saving equipment and drugs and the paramedic services that come with ambulances.
2. Delhi & Andhra Pradesh Govts. have capped the tariff.
3. Private ambulances should be integrated with government portals like the 108 to create a centralized and efficient service.
4. Specific ambulances should be deployed to evacuate COVID patients in every district.
5. UT of Jammu & Kashmir has deployed dedicated ambulances for each dist.

8 Recommendations for Data Management

8.1 Data centralization

1. Having a centralized data source which is informative and educative. The key parameters for data visualization could be under the following heads like Tests, Active cases, quarantine, Hospitalization, discharged, recovered, deaths etc.
2. Use of an Indicator for Income Classification (Ex. People entitles to PDS, Ration card holders vs Non holders) to prioritize Government hospital admissions.

8.2 DATA INTEGRATION

1. Creating an application which traces and shows data transparently from Testing to Discharge/Death
2. The information upload could be first party for increased authenticity.
3. Hospital Administrations and treatment processes, discharge is uploaded.
4. For those in home quarantine, follow up phone calls to get information which is then uploaded.
5. In case of death, the details (Minus personal) are added.
6. There should be prepared plan for such situations.
7. Municipality in local areas have access to their Aadhar records, so easy access to data without risk of infection.
8. Incentives are given for the people to promote app usage and help the community.
9. app works on predictive analysis so it would help the user get an idea of what could happen and help to prepare in advance.
10. Using metrics to track data. E.g., number of beds available to number of positive cases in that district
11. Placing QR scanners (linked to Aadhar cards to prevent malpractice) at public places, at the entrances of all group gatherings so their current medical status can be scanned.
12. COVID app should be a mandatory feature in mobiles to scan the QR codes.

8.3 DATA VISUALIZATION

1. Need for a unified structure with Live Dashboards and infographics which can give information about
    - Active Cases
    - Deaths
    - Tests
    - Beds and other resources availability per Hospital
    - Vaccinations
    - Projections

8.4 PARTICIPATIVE VISUALIZATION

1. To prevent misinterpretation of data
2. To help the Government in Decision and Policy making
3. For easy and transparent access to data.

9 RECOMMENDATIONS FOR MEDIA OUTREACH

9.1 TO SET UP A DEDICATED MEDIA CELL

1. Dedicated media cell partnered with NDMA (National Disaster Management Authority) for instant support for better delivery of safety announcements and warnings to threatened communities.
2. An independent body without any political and bureaucratic influence.
3. The media cell will comprise of senior editors, journalists, media agencies and volunteers.

4. The daily press conference should be live telecasted with real time data and the same to be published in newspaper electronic media.
5. Collaboration of media cell with press counsel of India or Indian newspaper society to track fake news and intentional misinterpretation of news.
6. Verified and timely sharing of information to public to sensitize them and provide them with factual statistics which reduces the misinterpretation of news.

9.2 PANEL OF EXPERTS TO BE FORMED

1. Panel of experts will comprise of eminent experts from the industry, academia, government, medical fraternity, and scientists.
2. Panel of experts will have regular(daily) interactions with media cell and there will be a daily press briefing on relevant issues.
3. Adding mental health session in various news channels can help people to overcome the stigma of pandemic.
   Publicizing awareness in regional newspapers and providing a space where individuals and entire communities can tell their stories.

9.3 MEDIA ANALYTICS CENTRE (MAC)

1. Media analytics center will help in collating and disseminating of data for the customization of stories by media cell.
2. Team of data analysts will analyze the data, give comparative analytics, and share it with media cell.
3. Media analytics center will seek regular feedback from public.
4. Media analytics center to partner with social media platforms like LinkedIn, Facebook, twitter etc., to disseminate and collate data on real time basis.
5. Usage of tools like Big Data, Block chain and Data Analytics for better understanding of public perceptions which results in authenticated broadcasts and Human-interest stories.

Covid 19 -Best Practices for India

Prepared by

ASCI and FICCI Telangana

Best Practices from treatment management

COVID HOME CARE(Home quarantine)

- The Philippines ,department of health developed home care package which contains vitamins, paracetamol, facemasks and shields, alcohol, disinfection supplies as well as monitoring tools such as thermometer, pulse oximeter. The kit will also contain some important contacts of local government units along with telemedicine and navigation. Few states in India like Telangana(along with the kits ASHA workers and sanitation staff will visit to give suggestions),Karnataka have started

developing-covid-19-home-care-package-hospitals-fill-up covid-19-home-isolation-package/ , https://www.thehansindia.com/news/cities/hyderabad/hyderabad-ghmc-to-deliver-one-lakh-home-isolation-kits-685084

- Need for psychological counselling and mental health care which was shown by a study conducted by Bayar university ,Turkey. The findings emphasized that there is a need for recreational activities which consist of activities involving individuals' personal characteristics, economic conditions, living conditions, and a range of socio-cultural situations as well as sportive activities. Performing both outdoor and indoor physical activities and recreational activities will be effective in individuals' being well physically, physiologically, and sociologically. https://files.eric.ed.gov/fulltext/EJ1252899.pdf , https://psychiatry.ucsf.edu/copingresources/covid19

- Karnataka has a vibrant mental health programme both at the state and district level which is supported by specialists from the National Institute of Mental Health and Neuro-Sciences (NIMHANS). the state government strengthened the collaboration with NIMHANS with the launch of the e-Mind technology programme. Under the initiative, more than 640 000 counselling sessions have been conducted so far to provide counseling on mental health and psychosocial issues to COVID-19 patients in hospital isolation wards, people in quarantine, contacts and migrants.

technological-innovation-partnerships-and-holistic-approache-in-karnataka

- Regular provision of medical guidance for people with covid 19 who are in home isolation Followed in Liberia ,west Africa which emphasized on clinical management of people with covid 19 infection at their homes which is accessed by a case management team and a criteria to be enrolled under home based isolation care (HBIC)and few states in India like Kerala have given guidance for home isolation

  interim-guidelines-for-home-based-isolation-and-care-of-covid-19

  Revised Guidelines home isolation (mohfw.gov.in)

- The Telangana government has issued guidelines for home isolation which includes instructions for covid patients and also for the care givers along with monitoring the condition and nutrition guide.

  Guidelines Manual English Version 7(CA06V6) (telangana.gov.in)

SECONDARY CARE

- **AYUSH AND BDS DOCTORS AS COVID DOCTORS**

Permitting of Dental and AYUSH Doctors for performing Covid duty in secondary care treatment as is done in Delhi and Andhra Pradesh and in many other states. Inclusion of Dentists in assisting the patients in Covid wards, Diagnostic procedures along with respective MBBS and AYUSH Doctors. there are proposals in some states providing training for the bds Ayush and paramedics to treat covid patients due to the man power shortage and many doctors falling ill.

https://www.bbc.com/news/education, uttarakhand-hc-state-govt

- Around 15% to 20% of doctors in Bhopal's largest Covid-19 critical care

other paramedic staff too are being trained to pitch in at the largest tertiary care hospital of the state capital (GMC)

bhopal/20-docs-down-with-covid-dental-ayush-

- In Karnataka The State government has decided to rope in final-year MBBS and nursing students for treating COVID-19 patients, by giving them grace marks, incentives, and postponing examinations.

karnataka/final-year-medical-nursing-ayush-students-to-be-roped

- In Delhi due to rapid increase in cases to meet they manpower needs they are taking in bds graduates.

new-delhi-covid-hospitals-allowed-to-rope-in-bds-doctors

- **Covid-19: Army opens hospitals to civilians, setting up temporary facilities** The Army is setting up temporary hospitals in different parts of india

timesofindia.indiatimes

CONVERSION OF PRIVATE SCHOOLS

- Converting private schools as COVID-19 care centres opposed. The Kumbakonam education district unit of the Tamil Nadu Nursery, Primary, Matric, Higher Secondary, CBSE Schools Association has opposed the conversion of private schools as COVID-19 care centres.

tiruchirapalli/converting-private-schools

- In Bengaluru private schools come forward to get converted in to covid care centres. Canadian international school and rashtrothana vidya Kendra

private-schools-come-forward-to-get-converted-into-covid-care-centres

SECONDARY CARE INNOVATIONS

- The greater Chennai corporation along with NGOs is set to launch “extension centres” which include major schools and colleges with which will be providing with beds, oxygen and other infrastructure while the NGOs will constitutes team of doctors and nurses.

/tamil-nadu/major-schools-colleges-in-chennai-to-turn-extension-centres-of-govt-hospitals-to-treat-covid-19-e

- Asimov Robotics, a start-up based in Kerala, has deployed robots at entrances to office buildings and other public places to dispense hand sanitiser and deliver public health messages about the virus. Robots are also being deployed in hospital isolation wards to carry food and medicines, which eases the pressure on medical staff.

india-how-coronavirus-sparked-a-wave-of-innovation

- Infosys has set up covid care centres at Pune and Bengaluru for its employees and their families and the company gets its 86% of the revenues from markets like US and Europe .These centres would be managed by ruby hall hospital for Pune and Manipal hospital for Bengaluru.

https://m.timesofindia.com/business/india-business/infosys-sets-up-covid-care-centres-for-staff-sees-no-impact-on-client-deliverables-amid-second-wave/amp_articleshow/82261371.cms

- Start-ups such as Meerut Drone tech have partnered with state governments to test the use of drones to monitor adherence to social distancing rules. Drones are also being used to deliver medical supplies and even check people's temperature using thermal imaging.

india-how-coronavirus-sparked-a-wave-of-innovation

TERTIARY CARE

- To ensure effective treatment to the needy, following bed allotment or admissions on priority based than first come first serve policy in both public and private sector like Singapore. In this scenario where the number of hospital beds is very less as compared to the number of COVID-19 infected patients, as per this rule In case of unavailability of hospital beds, emergency beds will be assigned to the severe patients.

- 80 per cent of isolation beds in private hospitals in Maharashtra will be charged at government rates for Covid-19 patients while hospitals will be allowed to charge as per their rates in remaining 20 percent of isolation beds. Hospitals in Mumbai, Thane, Navi Mumbai and Pune, which have agreement on treatment packages with General Insurance Public Sector Association (GIPSA), can't charge more than the lowest bed category rates for patients. In hospitals with no GIPSA package, a government-mandated pricing has to be followed.

mumbai/maharashtra-extends-8020-reservation-ratio-in-private-hospitals/

- The Bangalore International Exhibition centre (BIEC) has been repurposed as a COVID care centre to accommodate 10,100 patients. The state also developed a centralized bed allocation system in Bengaluru city aided by the war room to streamline the process of testing, triaging, transfer, and treatment of COVID positive patients.

technological-innovation-partnerships-and-holistic-approach-in-karnataka

CASHLESS TREATMENT FOR COVID PATIENTS

- Network hospitals can't deny cashless claims to COVID-19 patients: IRDA.

  insurance/network-hospitals-cant-deny-cashless

- Telangana State join the Centre's Ayushman Bharat (Pradhan Mantri Jan Arogya Yojana) Covid patients across the State are eligible for their treatment under Ayushman Bharat-PMJAY-Aarogyasri .

  telangana-to-implement-ayushman-bharat

- AP govt offers cashless coronavirus treatment under flagship YSR Aarogyasri scheme

  andhra-pradesh-govt-cashless-coronavirus-treatment

- COVID-19: Andhra govt adds black fungus to Aarogyasri scheme

  covid-19-andhra-govt-adds-black-fungus-to-aarogyasri

- Hospitals empanelled under various free healthcare schemes across Uttarakhand were asked to give cashless treatment to COVID-19 patients covered under the Pradhan Mantri Jan Arogya Yojana, Atal Ayushman Yojana and a state government health scheme.

  uttarakhand-free-healthcare-schemes-to-get-cashless-treatment

- In Karnataka , cashless treatment for covid 19 patients in private hospitals

  covidhelplinebangalorecashless-treatment-for-covid-19

HOW STATES ARE DEALING WITH COVID RELATED COSTS IN PRIVATE SECTOR

- COVID-19 hospital care does not cost anything at all in some states while others have to pay depending on the rooms they prefer while admitted to hospitals. In TN The private hospitals have to earmark a minimum of 25 percent of their beds towards patients referred by the government for non-critical care. There is no earmarking of beds for critical care. The notification issued by the Karnataka government says “50 percent of the beds in private hospitals having facilities to treat COVID 19 patients shall be reserved for the treatment of patients referred by public health authorities. This will include ICU beds both with and without a ventilator.

covid-19-treatment-from-affordablets

- The private hospitals that have a National Accreditation Board for Hospitals & Healthcare Providers (NABH) can charge Rs 2,910 per day for the general ward, and those without NABH can charge Rs 2,645 per day. For the High Dependency Unit (HDU), hospitals can charge Rs 3,795 (non-NABH) and Rs 4,175 (NABH), per day. For ICU beds per day, hospitals can charge Rs 7,800 (non-NABH) and Rs 8,580 (NABH). Private hospitals are allowed to charge up to Rs 13,800 (non-NABH) and Rs 15,180 (NABH) per day for ICU with ventilators. Hospitals can also charge extra for investigative tests like CT chest /HRCT chest scans, as well as for PPE kits, and costly medications like Remdesivir and Tocilizumab. Other than these, all other services are included in the above-mentioned charges. Kerala-government-caps-rates-covid-19-care-private-hospitals

- The Maharashtra government has come out with three slabs on per day charges on treatment of COVID-19 patients in private and charitable hospitals and also decided to regulate rates for 80 per cent of the operational bed capacity in these medical facilities. For COVID-19 patients, there will be three rate slabs on a per day basis – Rs 4,000, Rs 7,500 and Rs 9,000 – based on the category of wards they have been admitted in, said the notification.

maharashtra-fixes-price-cap-on-private-hospitals

INCENTIVES TO FRONT LINE WORKERS

- In Telangana All regular, contract and outsourced staffers of the Medical and Health Department are provided 10 per cent of their gross salary/remuneration as an incentive for the month or two which also included sanitation and police department too.

telangana-frontline-workers-fighting-covid-19-receiving-incentive
telangana/2020/apr/08/health-staff-to-get-10-incentive

- Tamil Nadu government has announced incentives for health workers from April to june2021 Rs.30,000 for doctors, Rs.20,000 for nurses and Rs.15,000 workers in covid wards.

/tamil-nadu-cm-stalin-announces-084338822.html

- Jammu and Kashmir approved special financial incentives for COVID-19 warriors the incentive will be Rs10,000 per month for resident doctors , PGs and Medical officers,Rs.7000 per month for nursing and paramedical staff ,and Rs.5000 per month for drivers ,sweepers and attendants. /jk-l-g-gives-covid-incentive-to-healthcare-workers/videoshow/82380870.cms
- The Odisha government announced pay incentives to the contractual ,outsourced and volunteer healthcare professionals from April to july2021. The incentive will be equivalent to the consolidated basic remuneration of a month excluding allowances or perks or taxes, if any, given to the staff. https://kalingatv.com/amp/state/odisha-to-provide-financial-incentives-for-frontline-health-workers/#
- The Puducherry has decided to provide incentive to all categories of healthcare workers including Asha workers, ANMs ,health inspectors ,ward boys, technicians, nurses ,doctors through an expenditure of Rs5crore puducherry-lt-governor-announces-incentive-for-healthcare-workers-amid-covid-19-surge-2299316.html

TRANSPORTING PATIENTS

- **ARIZONA SURGE LINE** : this gives the best way of how people are transported for higher healthcare in Arizona Through a public-private partnership with private hospitals and NGO, Arizona established an unprecedented statewide patient transfer center . Arizona Surge Line" to coordinate transfers of Covid-19 patients among the four health care systems in the state (Tenet, Banner Health, Common Spirit, and Honour Health) and other independent hospitals. Any hospital can call the Surge Line to request transfer of its Covid-19 patients to the appropriate level of care. The Surge Line leveraged the data capacity of a health information exchange that captured 95% of hospitals in the state to ensure efficient allocation of needed resources and load-balancing of Covid-19 patients and with the fixed charge

catalyst.nejm

- **GPS TRACKING IN BHUBANESWAR** For better COVID management and quick transfer of patients to the Dedicated COVID Hospitals (DCH) and COVID Care Centres (CCC), the Bhubaneswar Municipal Corporation (BMC) has started GPS tracking of ambulances. When a patient is referred for shifting to a DCH or CCC after due teleconsultation at BMC COVID care 24x7 Helpline '1929', operating from Smart City office, BMC allocates available bed in one of the COVID hospitals or CCC. An ambulance is alerted to pick the patient from his/her residence. These ambulances are now fitted with onboard GPS units for real time tracking. This provides an estimated time of arrival of the ambulance to the patient's residence just like we know the location of a taxi when we book through various apps on our mobile phones.

gps-tracking-of-ambulances-for-quick-transfer-of-covid-patients-to-hospital

GPS-tracking-of-ambulances-for-quick-transfer-of-COVID

BEST PRACTICES

SUPPLY CHAIN MANAGEMENT

BEST PRACTICES

a) Creation of 'Oxygen Concentrator Banks'

- Around 200 oxygen concentrator banks have been set up in all districts of Delhi – provided 'free'
- Door-to-door delivery – benefited around 160 patients

b) Oxygen Storage & Supply

- ISRO has provided large capacity fuel tanks to be repurposed & used as stores of liquid oxygen across states
- IOCL converted 29 unused LNG tankers into medical-grade oxygen carriers

Contd.

- IOCL contributed to India's available Cold Chain Equipment (CCE) infrastructure in the four States of Jammu & Kashmir, Tamil Nadu, Bihar and Manipur
- Mumbai civic body installed 15 Liquid Medical Oxygen [LMO] tanks (13 KL capacity each) and 11 smaller tanks (6 KL each)
- Kerala's model of oxygen monitoring and "PRANA AIR FOR CARE" project provides oxygen to all in-patient beds through pipelines
- Convergence and Collaboration of Kerala State with PESO

Contd.

c) Rational & Efficient Use of Oxygen

- Govt. of Maharashtra has decided to fix the PMF depending on criticality level
- The “California Model”: the state issued guidelines to emergency workers for administering the “minimum amount of oxygen necessary”

d) Provision of Oximeters

- Manipur, Delhi, Karnataka provide free oximeters to all patients recovering from home isolation

e) Ambulance Service

- Delhi govt has capped the maximum tariff that the private ambulance services can charge
- In the UT of Jammu & Kashmir, adequate ambulances have been deployed in every district of the UT to evacuate COVID patients to nearby designated COVID Health Institutions

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Contd.

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- https://timesofindia.indiatimes.com/india/explained-in-10-charts-the-rise-of-covid-19-second-wave-in-india/articleshow/81910892.cms (1st vs 2nd comparison)
- https://indianexpress.com/article/explained/covid-curve-coronavirus-cases-second-wave-7319239/ (Dr Shahid Jameel)
- https://www.indiatoday.in/coronavirus-outbreak/story/how-much-oxygen-a-covid-19-patient-needs-is-oxygen-concentrator-enough-1798378-2021-05-03 (oxygen concentrators)
- https://qz.com/india/2009552/indias-oxygen-concentrator-black-market-preys-on-covid-patients/ (concentrators black marketing; difficulty in domestic expansion; price ceiling)

Best Practices in Data Management

Data Centralization

Best Practices

Government Health Websites: Australia and New Zealand [3,4]

Key Points

In depth data regarding the number of cases, deaths, recoveries, method of contraction

Tamil Nadu Control Room [5]

Has in-depth information about all the necessary Covid Data.

Data Integration

Best Practices

APPS USED BY VARIOUS COUNTRIES to integrate the data and create strong database

AUSTRALIA [6]
Key Points: Attendance App, Covid Tracing App, Covid Safety App
Atlassian company

SINGAPORE – Trace Together [7]
Key Points: Works with Bluetooth signals.

Best Practices

UK – NHS App [8]
Key Points:

SOUTH KOREA [9]
Key Points: The Korean Ministry of Health and Family welfare maintain an infectious disease plan they change every year accordingly. That helped them with preparedness of covid-19.

INDIA
Key Points: MITRA ROBOT for thermal Scanning - Fortis Hospitals

Covid App article by Mr. T. Muralidharan [10]

Data Visualization

Best Practices

There are various websites which visualize the Covid data in a way that is very informative and precise. A lot of these come integrated with live dashboards

INFORMATION IS BEAUTIFUL [11]
This website is beautifully curated to show infographics of all that one needs to know, in real time. Number of cases, vaccinations, deaths, country comparison, risky activities and such.

JOHN HOPKINS [12]

IHME - Covid 19 projections [13]
This website provides real-time projections of the disease under the various heads like, deaths, resource use and availability, mask usage, infection rate

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2. MoHFW | Home
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12. https://www.arcgis.com/apps/opsdashboard/index.html#/bda7594740fd40299423467b48e9ecf6
13. https://covid19.healthdata.org/india?view=total-deaths&tab=trend

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SINGAPORE –
Trace Together [6]
Key Points: Works with Bluetooth signals.

Best Practices

UK – NHS App [7]
Key Points: Single point of access for information

SOUTH KOREA [8]
Key Points: The Korean Ministry of Health and Family welfare maintain an infectious disease plan they change every year accordingly. That helped them with preparedness of covid-19.

Best Practices

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10. https://www.arcgis.com/apps/opsdashboard/index.html#/bda7594740fd40299423467b48e9ecf6
11. https://covid19.healthdata.org/india?view=total-deaths&tab=trend

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BEST PRACTICES(MEDIA CELL)

- The Delhi government in 2020 April issued an order directing all the hospitals to create media cells to tackle a large number of social media messages regarding their functioning.

  https://www.republicworld.com/india-news/general-news/covid-19-delhi-govt-hospitals-to-create-media-cells-to-tackle-social.html

- Government officials held press conferences twice a day, giving journalists the chance to ask questions and To communicate latest guidance in South Korea and UK.

  /www.medicalnewstoday.com/articles/covid-19-what-can-we-learn-from-south-koreas-response#Communication

  https://www.bbc.com/news/uk-politics-53275395

BEST PRACTICES(MEDIA CELL)

- Disaster management websites such as FEMA (Federal Emergency Management Agency)in united states of America and NEMA(National Emergency Management Agency) in New Zealand partnered with media and caters much importance to its role during disasters.New Zealand's website also mentions resources available to media and experts to be contacted by them for the gathering of information.FEMA in US is using social media to engage public before and after disasters.

https://www.civildefence.govt.nz/media/media-resources/

https://www.fema.gov/about/news-multimedia/social-media

- In the face of constantly evolving information and news about the worldwide pandemic, a solutions journalism approach is helpful .Stories like one from CNN, about how South Korea pioneered drive-through testing centers that have increased COVID-19 testing access.This gave evidence-based reporting on the responses to social problems.

https://edition.cnn.com/2020/03/02/asia/coronavirus-drive-through-south-korea-hnk-intl/index.html

BEST PRACTICES(PANEL OF EXPERTS)

- In Kerala tele medicine portal e-sanjeevani for Tele consultation across the State and Ottakalla oppamundu for providing psychosocial support are in place and 1143 mental health professionals, including psychiatrists, psychiatric social workers, clinical psychologists and counsellors have been deployed to provide support to people in quarantine. Counselling service is also provided to frontline workers working in corona outbreak control activities.

https://www.who.int/india/news/feature-stories/detail/responding-to-covid-19---learnings-from-kerala

- A high-level committee led by the Chief Minister, Health Minister, Chief Secretary and the Principal Secretary (Health) has been set up to monitor, coordinate and guide actions in the field in Kerala.

https://www.who.int/india/news/feature-stories/detail/responding-to-covid-19---learnings-from-kerala

BEST PRACTICES(PANEL OF EXPERTS)

- In china with the timely interventions of health experts with media saw an upward trend for the adaptation of safe health practices and mental health sessions.
- The positive impact of the media was shown by promoting emotional stability among people.
- An expert team has been formed to provide online mental health services to combat mental diseases

https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7557800/

BEST PRACTICES(MEDIA ANALYTICS CENTER)

- In India data scientists are extracting unreliable information using machine learning techniques.

https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7381929/

- In Australia Newspapers were selected for the media analysis to check the credibility of articles and news that is printed.

https://www.frontiersin.org/articles/10.3389/fpubh.2020.00483/full

- According to a results of study in Australia on social media analysis approach (a) Social media analytics is an efficient approach to capture the attitudes and perceptions of the public during a pandemic; (b) Crowdsourced social media data can guide interventions and decisions of the authorities during a pandemic, and; (c) Effective use of government social media channels can help the public to follow the introduced measures/restrictions.

https://link.springer.com/article/10.1007/s13755-020-00121-9





Thank You

Covid 19 Wave 2 Recommendations for India

Prepared by

ASCI and FICCI

Acknowledgements

Thanking the support given by FTCCI and TMI Network

Study team

	Covid Treatment	Supply Chain Management	Data Management	Media Outreach
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Previous studies done by FICCI, ASCI and FTCCI

Covid 19 Action Plan: Recommendations for Telangana Government (Phase 1)

Covid 19 Action Plan: Recommendations for Telangana Government (Phase 2)

Current Scenario and Rationale

- Second Wave of Covid 19 all over the country since mid February 2021
- Vaccination drive (double doses) has been able to cover only 5 % of the population
- The health system has taken a toll due to the increased Covid active cases although recovery rates are still high

Vaccination

I. Population

- Total Population : 1350 Mn
- Above 18 years : 945 Mn *(approx. 70%)*

II. Total Vaccinations (as on 29th May, 2021)

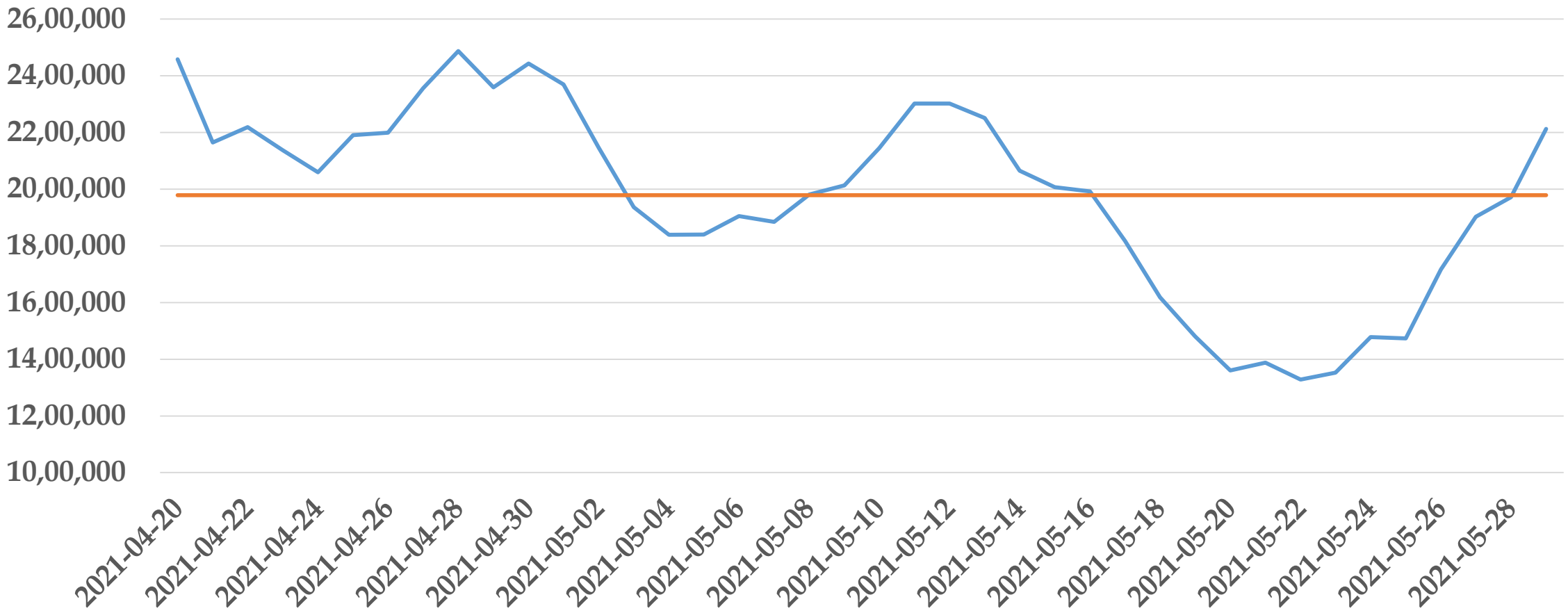
- Population Vaccinated : 196 Mn
- Full : 42 Mn
- Partial : 154 Mn

III. Balance Population (Target Group)

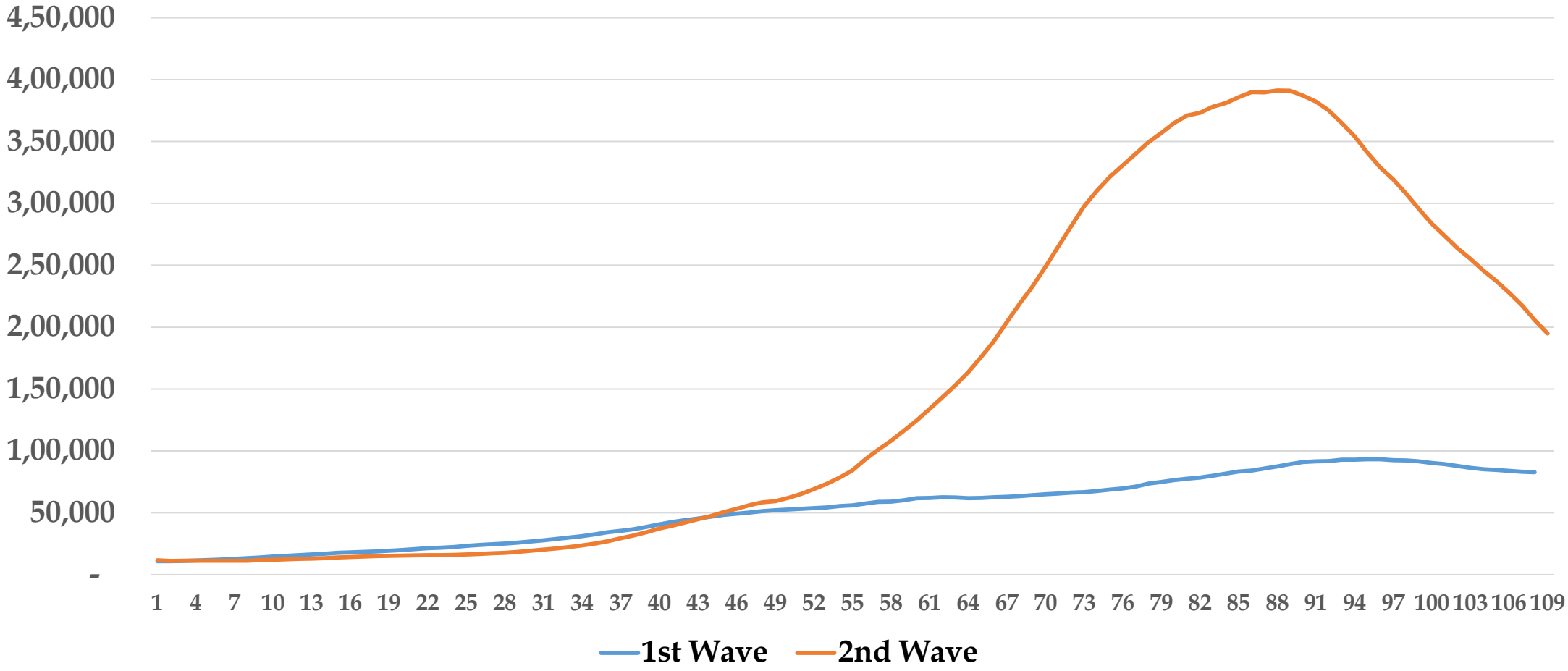
- Population with 1 or 0 dose : 903 Mn
- **Population without any dose : 749 Mn**

Source: ASCI FICCI calculations

Smoothed Daily New Vaccinations
since April 20, 2021

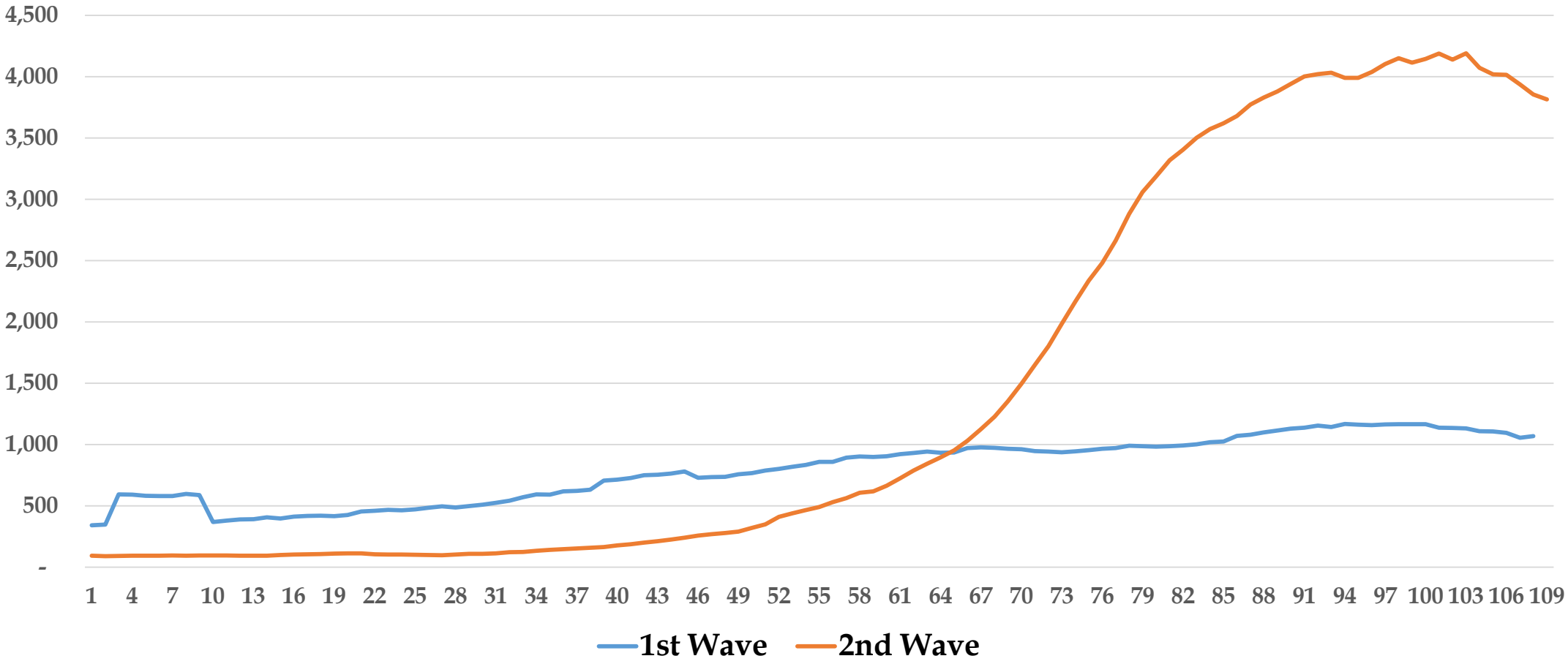


Smoothed Daily New Cases



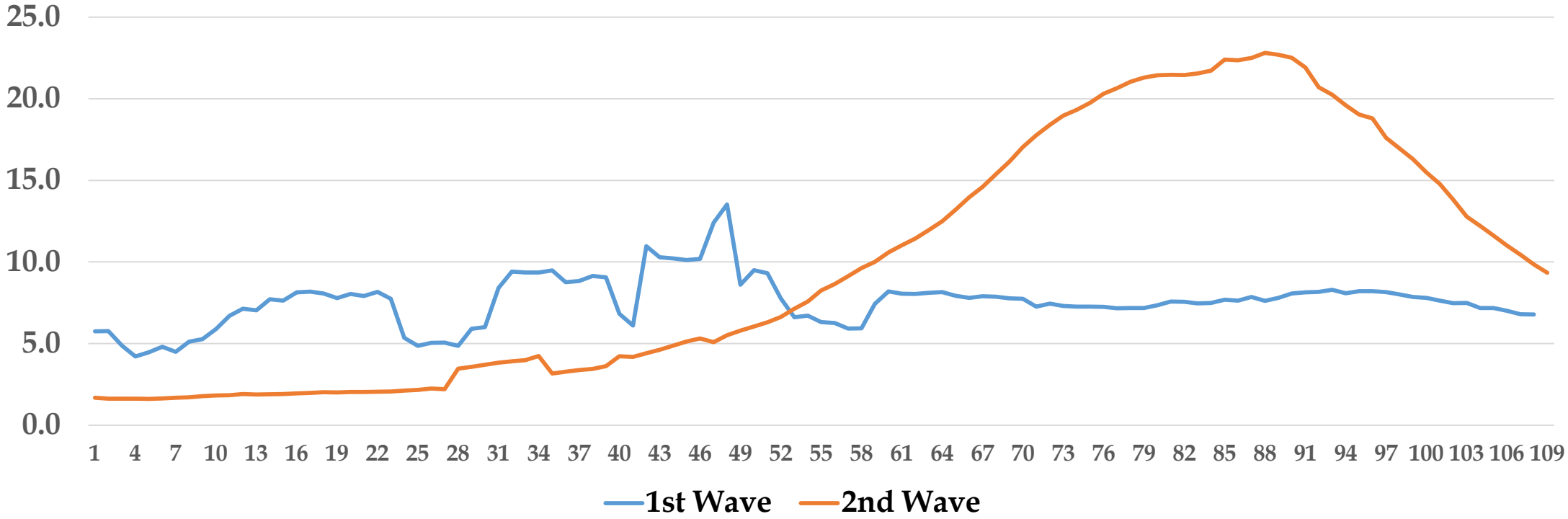
1st Wave: Jun 15 - Sep 30, 2020
2nd Wave: Feb 10 - May 29, 2021

Smoothed Daily New Deaths



1st Wave: Jun 15 -Sep 30, 2020
2nd Wave: Feb 10 - May 29 2021
The number of daily deaths has risen sharply in the 2nd wave

Daily Positivity Rate



Second wave more intense than the first wave

Covid Scenario expected in the coming months

- Bhramar Mukherjee Covid study and Institute of Health Metrics and Evaluation predicted 8-10 lakhs daily cases per day and 4500 deaths per day.
- Based on current estimates the number of daily cases is around 4.5 lakhs and with a delay in vaccination it could go to 5-6 lakhs per day.
- Niti Aayog has predicted a third wave even if the second wave tapers off in the next few months
- This is an attempt to provide actionable recommendations and document best practices which will help the country to overcome the Covid crisis and help prepare for the third wave of Covid

The recommendations are being provided assuming three scenarios that the daily new cases would be 3 lakhs (due to lock down impact), 6 lakhs and 9 lakhs in the future

Health Infrastructure Requirement under Optimistic, Realistic, & Pessimistic Scenario			
	A Conservative Scenario	A More Likely Scenario	A Worse Scenario
Daily New Cases	3,00,000	6,00,000	9,00,000
Active Cases*	27,00,000	54,00,000	81,00,000
Home Isolation (80% of active cases)	21,60,000	43,20,000	64,80,000
Hospitalisation (17% of active cases)	5,40,000	10,80,000	16,20,000
Isolation Beds	2,29,500	4,59,000	6,88,500
Oxygen Beds	2,29,500	4,59,000	6,88,500
ICU Beds (3% of active cases)	81,000	1,62,000	2,43,000

***Factor (daily new infections to active cases): 9**

Ref: MOHFW EAG calculations on hospitalizations in Covid

Four areas covered in this report

- Covid Treatment Management
- Supply Chain Management
- Data Management
- Media Outreach

Disclaimers

- Newer innovations are adopted on a daily basis by the centre as well as in the states; all information collected recently have been included in the report

- Recommendations pertaining to ongoing Vaccination program is excluded from the purview of the study.

Covid Treatment - current scenario compared to Wave 1

1. Wave 1 slowdown had two major impacts
   - Over confidence on disease containment resulting in dilution of lockdown and more importantly on dismantling of covid infra including reduction of covid beds, non-installation of oxygen infra and even of key drugs like Remdesivir
   - Public adherence to safety protocols had dropped significantly in March and even April during election meetings and Kumbh Mela
2. The Delta variant which is the cause of wave 2 - is **far more virulent** and **deadly**. It spreads very rapidly to the entire family even before the test results are received. This has implications for home quarantine
3. Due to huge upswing in testing – no of daily tests have gone up to 20.11 lakhs on May 20, 2021 as compared to around 13 lakhs in January 5, 2020 This has created huge queues in test centers and delay in result declaration.

4. Covid is moving rapidly to rural India where treatment infra is very poor. Active cases in rural India is also increasing.

5. There is a Compliance fatigue even in hospitals and Government apart from public at large. Contact tracing and micro containment is not being implemented properly. Deaths have also demoralized government servants

6. Central Government has decentralized covid response and more responsibilities are on the state government resulting in wide variation in Covid response. The states have limited financial resources compared to central government.

7. Most states have announced lock down and this has immediate impact in certain states, in terms of positivity rates and number of new cases. But we cannot make the same mistake as last time and presume that the disease has lost its intensity.

8. The oxygen, hospital bed and Remdesivir situation had become complicated in few states and Union Territories .

9. The profile of hospitalization patients has changed to middle class and upper class victims almost resulting in fear among these classes

10. The civil society is fast to adopt technology and the civil society has got involved far more actively during this second wave.

11. The Government has felt the economic impact of extreme lock down of phase 1 and hence there was a reluctance to impose severe lockdowns.

Covid Treatment - key assumptions for wave 2

1. Covid **funds from Government will be in short supply**
2. The civil society, private hospitals must take an active role. Government to acknowledge and encourage private initiative rather than control it
3. We have to presume that **Lockdowns can only delay** the spread but cannot prevent it , based on our wave 1 experience.
4. The Delta variant is very virulent and is expected to infect majority of population according to some studies and is now very active in rural India. Hence **prevention focus is not enough**.
5. **Early detection** – with extensive testing and fast and accurate results – and shifting of patient to covid centers is the only way to prevent the entire family getting infected. **Communication to family members** hence has become very important

6. The action must shift to treatment and treatment infrastructure capacity – at home. Covid centers and hospital infra and associated consumables like Oxygen and drugs

7. **Rural treatment infra** is very important in this wave compared to urban infra in the first wave

8. Mass and daily communication in vernacular media has become very important

9. Private individual and corporate contributions through CSR should be encouraged

Key recommendations for Covid Treatment

1.Encourage Home and secondary Covid Care and prevent direct hospitalizations

1.1 AIIMS must publish **Detailed day wise guidelines** for patient and family during home quarantine. The guidelines must cover medicines, daily monitoring requirement, food and nutrition and escalation conditions. This has been followed by countries like Liberia. States like Telangana and Tamil Nadu (by CMC Vellore) had come up with similar covid guidelines.

1.2 Set up with NGO help, covid counselling call centers with recovered patients as mentors: States like Karnataka have taken the help of NIMHANS to facilitate psychological counselling. Turkey made it mandatory for recreational activities during home quarantine.

1.3 Set up an exclusive integrated App to provide real time Patient support which will connect patient to all resources in one App – food, doctors, medicines , secondary covid care center, ambulance etc and daily communications on home care by designated experts - through vernacular TV would be extremely important for those under home quarantine.

2. Create large numbers of secondary care centers in each district under private management

2.1: Encourage subsidized secondary covid care centers with oxygen facility , doctor care, basic medicines , ambulance for pick up and drop to hospitals. Each covid care center must be tied up with a hospital. Set up private secondary care centers in each district at Mandal/Block level with private and trust management - in large private schools (schools under summer vacation) or low cost hotels with tie up to hospitals.

- Tamil Nadu has led this initiative remarkably where a lot of private schools in Kumbakonam, Chennai etc have been converted into covid care extension centres.

2.2: Incentivize funding from corporates and individuals – through tax and CSR benefits

2.3: Communicate that movement to the secondary centres are essential to prevent family getting infected; This has been done successfully in few districts in Maharashtra. To provide confidence to poor patients – subsidize, provide free oxygen facility, adequate health manpower and referral transport and automatic admission to “tied up” hospitals.

2.4: The Government should encourage such initiatives with legislative protection for promoters of the isolation Centres and Covid secondary treatment centers and provide security against any untoward incidents. Open areas inside Army cantonment areas, open plots inside PSU compounds and railway owned areas should be made available for creating secondary care centers in urban areas .

- The Army, DRDO, Railways etc have already committed to helping the government.

2.5: Ensure adequate manpower by adding BDS and Ayush doctors in secondary care centres. This was done in states like Delhi, MP, Uttarakhand etc.

3. Tertiary Care

3.1: To prevent exorbitant and uncontrolled hospital bills , government to announce COVID packages for each co-morbidity like Heart operation packages. This will cap the bills; However the packages to be decided by joint consultation with the private sector: States like Kerala and Maharashtra have created packages jointly for covid treatment across different types of hospitals.

3.2: Hospitals must be made responsible for maintaining adequate inventory of all Covid medicines and consumables and to be provided strictly at government announced prices

3.3: Create a web site/ App for publication and comparison of hospital bills to publish the bills: Covid related packages still can be brought under all Government sponsored Insurance schemes for the benefit of BPL population and those who cannot afford the costlier insurance schemes like 'Kavach'. Many states like AP Telangana have included Covid treatment under PM-JAY Ayushman Bharat scheme. The entire insurance packages to be made cashless. And IRDA must set up a call center to receive complaints

3.4: Bed Management to be streamlined; Panel of Medical experts to decide on the guidelines based on existing medical condition like Oxygen level, infection rate etc. Singapore had successfully done this prioritization so that emergency patients receive the beds first.

3.5: Frontline health workers to be incentivized (both financial and non-financial) to motivate them; Incentives like advance salary, additional salary, covid treatment facilities were implemented by many states like Odisha, Telangana, Tamil Nadu, Karnataka etc.

COVID-19
&
SUPPLY CHAIN MANAGEMENT

1. Background

- Production, Efficient utilization, Supply-chain, Logistics, and Storage of **Oxygen** – concerning issues
- Ensuring continuous functioning of COVID **Pharmacies** – a critical requirement
- Tariffs and services by **Ambulances** – ensuring they reach the needy

Contd.

Current Health Infrastructure Availability in India			
	Hospitals	**Health Centres**	**Total**
Isolation-Beds	2,63,573	2,31,462	4,95,035
Oxygen-Beds	1,54,993	1,00,175	2,55,168
ICU Beds	50,408	25,459	75,867
Total	4,68,974	3,57,096	8,26,070

P.S: Data as reported by the Union Ministry of HFW on 29th April, 2021

Contd.

Estimated Gap Analysis of Health Infrastructure			
	A Conservative Scenario	A More Likely Scenario	A Worse Scenario
Isolation-Beds	2,65,535	36,035	-1,93,465
Oxygen-Beds	25,668	-2,03,832	-4,33,332
ICU Beds	-5,133	-86,133	-1,67,133
Total	2,86,070	-2,53,930	-7,93,930

Source: ASCI-FICCI calculation.
P.S: +ve values indicate a surplus whereas -ve indicate a shortage

2. Oxygen Crises

a) Demand & Present Requirements – *Rising?*

- During Pre-COVID, the oxygen requirement was 700 MTPD
- During the peak of 1st Wave in Sep 2020, the demand was 2800 MTPD – **Four Fold Increase**
- During the 2nd wave, oxygen requirement is estimated to be 3 times at **8,400 MTPD – 12 Fold Increase**

(**Source**: Mukul, J. (2021). *Business Standard*, April 20, 2021.)

Contd.

- On an average, a COVID patient requires – 01 to 02 litres of medical oxygen per minute
- Factoring in wastage in oxygen supply and utilization capacity of the lungs at the moment, this requirement may translate into 03 to 04 litres of medical oxygen per minute
- On an average a patient requiring High Flow Nasal Oxygen (HFNO) needs – 60 litres per minute per patient
- In extreme cases, the oxygen requirement can increase up to 86,000 litres per day per patient

(**Source**: Mukul, J. (2021). *Business Standard*, April 20, 2021.)

Contd.

b) Production Capacity

- Current Production capacity of LMO – 9,200 MTPD
- An increase by 61% from 5,700 MT/day in Aug 2020
- Industrial consumption has now become negligible

c) Distribution / Spread – *Uneven?*

- Production Capacity of 9,200 MTPD is unevenly spread
- 08 states (MH, GJ, JH, OD, TN, KA, KL and WB) account for 80% of total production

(**Source**: Sankar, A. (2021). Khaleej Times, May, 05, 2021.)

Contd.

d) Logistics: Oxygen Cylinders vis-à-vis Concentrators

- Smaller hospitals/medical centres that do have storage tank facility rely on cylinders
  - Substantial wastage of oxygen
  - Lack of adequate cylinder manufacturing capacity
- Given finite capacity limits of cylinders, Oxygen concentrators are in high demand
  - Exorbitant Prices; Import Logjam; Needs continuous electric supply; Not suited for COVID complications

Contd.

e) Transportation Hurdles

- Inadequate cryogenic tankers
- Time taken to ferry oxygen from manufacturers to patient's bed has increased from 3-5 days to 6-8 days
- The increase in cost for transport and logistics has raised the cost of refilling cylinders
    - A cylinder that would earlier cost Rs 100-150 for refiling, now costs Rs 500-2000

Contd.

f) Inefficient Use of Oxygen

- Oxygen consumption per active case widely varies across states
- In Delhi, per capita oxygen consumption (per active case) is 0.0047 MT whereas that in Maharashtra it is 0.00025 MT
- Similarly, glaring differences seen across Kerala, UP, Karnataka, and Rajasthan

(**Source**: Shrivastava, R. (2021). India Today, May, 08, 2021.)

3. RECOMMENDATIONS

I. Procurement, Pricing & Safety of Oxygen Concentrators

- Cargo flights should be sent to import friendly nations for procuring oxygen concentrators.
- 'Oxygen concentrator banks' should be created wherefrom the patients in home isolation can borrow.
    - Already set-up 200 oxygen concentrator banks in all centres of Delhi – Provided free of cost
- Every hospital should be asked to submit a "double back-up" plan required for Oxygen

Contd.

II. Oxygen Storage & Supply

- The govt. should draw long-term plans and build the capacity of oxygen storage on a large scale
- Steps should be taken to explore the creation of "Oxygen National Grid".
- The idea is to have a National Grid for suppling bulk oxygen just like how a power grid operates.
- IOCL should play a pivotal role not just in strengthening supply-chain but also in building India's long-term liquid oxygen storage capacity
  - IOCL converted 29 unused LNG tankers into medical-grade oxygen carriers; contributed to India's available Cold Chain Equipment
- IOCL in convergence with Ministry of Road Transport & Highways, oil companies and other central & state agencies should monitor allocation, dispatch and receipt of oxygen
  - Convergence and Collaboration of Kerala State with PESO

Contd.

III. Rationale and Efficient Utilization of LMO

- The govt. should fix some standard or benchmark for rational and efficient use of Oxygen depending upon the oxygen saturation levels
  - Govt. of Maharashtra has decided to fix the PMF depending on criticality level; The “California Model”: The state administering the “minimum amount of oxygen necessary”

IV. Provision of Pulse Oximeters

- The Govt. should provide oximeters to all patients recovering from home isolation
  - Manipur, Delhi, Karnataka provide free oximeters to all patients recovering from home isolation

Contd.

V. COVID Pharmacies

- Covid pharmacies can be set up by the government to help common people with essential medical supplies that includes medical drugs, oxygen, masks & cylinders
- Followed by Tamil Nadu & Karnataka

VI. Ambulance Services

- Ambulance charges should be capped & charges should be fixed on basis of life-saving equipment and drugs and the paramedic services that come with ambulances.
- Delhi & Andhra Pradesh Govts. have capped the tariff
- Private ambulances should be integrated with government portals like the 108 to create a centralized and efficient service.
- Specific ambulances should be deployed for evacuation
- UT of Jammu & Kashmir has deployed dedicated ambulances for each dist.

DATA MANAGEMENT

- Data Centralization
- Data Integration
- Data Visualization

Data Centralization

Current scenario

The data regarding Covid 19 that is available right now is not aggregated , there is a significant time lag between the occurrence of the events and the reporting of the same .

NDMA [1]

The NDMA website gives in depth information regarding details of the disease itself- COVID19. The following are the topics covered in the website. As of 31st May 2020

- Demographic disaggregated data
- Mortality pattern in India
- Socio-Economic impact of covid 19
- Communication
- governments policy response for managing the effects of lock down
- Resource deployment in the context of Covid response
- Use of technology- Aarogya Setu App
- NDMA Guidelines
- **Low Pandemic Data and guidelines coverage**

MOHFW [2]

The data available in the website of the Ministry of Health and Family Welfare is as follows

- Active cases
- Discharged
- Total Vaccinations
- Deaths
- Total Tests done on previous Day

Other Non Governmental Data sources found to be erratic in terms of data consistency and transparency.

Recommendations

1. Having a centralized data source which is informative and educative. The key parameters for data visualization could be under the following heads

Test	Active	Hospitalized	Quarantined	Recovered	Death	Vaccinations
• Total tests per day • Positive • Negative • Awaiting result • Covid positivity rate	• Total Active cases • TPR • Based on Source of Infection • Based on Demographics • Infection Rate • Penetration speed	• Number of ICU beds • ICU/Non • Presence of Co-Morbidities	• Total • New • Net	• Total • New • Net • Vaccinations	• Deaths to positive cases • Deaths to number of beds • Deaths to recoveries	• Number of people vaccinated • Based on demographics • Number of shots available State wise data

- Use of an Indicator for Income Classification (Ex. People entitles to PDS, Ration card holders vs Non holders) along with severity of disease to prioritize Government hospital admissions.

- Having a national data grid and a parallel private data grid (Data source-patients) to prevent data manipulation.

- Data crime reporting to be included under DMA

- Cross-verification of diagnostic data

Data Integration

Current Scenario

- Various Websites giving data based on third party collection and uploads.
- Disconnect between available data and real time scenario
- Lack of a Health Monitoring System in public places for better screening.
- People in rural areas unable to use the app or any digital feature due to lack of technology, education and digitalization.
- Inadequate or complete lack of training of the ASHA workers in terms of covid data collection.
- Municipality data not being surveyed.

Recommendations

1. **Creating an application which traces and shows data transparently from Testing to Discharge/Death**
   a. The information upload could be first party for increased authenticity
   b. Hospital Administrations and treatment processes, discharge are uploaded
   c. For those in home quarantine, follow up phone calls to get information which is then uploaded.
   d. In case of death, the details (Minus personal) is added.
   e. There should be prepared plan for such situations.
   f. Municipality in local areas have access to their Aadhar records , so easy access to data without risk of infection.
   g. Incentives are given for the people to promote app usage and also help the community
   h. App works on predictive analysis so it would help the user get an idea of what could happen and help to prepare in advance.

2. **Using metrics to track data. Eg: number of beds available to number of positive cases in that district**

3. **Placing QR SCANNERS (LINKED TO AADHAR CARDS to prevent malpractice) at public places, at the entrances of all group gatherings so their current medical status can be scanned.**

4. **Covid app should be a mandatory feature in mobiles to scan the QR codes.**

5. **People who have taken both doses of vaccine can have multiple entries to public places for the approximately 10 days.**

Data Visualization

Current Scenario

- Lack of unified REAL TIME data from the source
- Presence of a significant time lag which leads to data distortion.
- Trend analysis is not possible – Key to understanding the regression or progression

Recommendations

1. **Need for a unified structure with Live Dashboards and infographics which can give information about**
   i. Active Cases
   ii. Deaths
   iii. Tests
   iv. Positivity rate
   v. Beds and other resources availability per Hospital including ICU and Oxygen beds
   vi. Vaccinations
   vii. Projections
2. **Participative Visualization**
   i. To prevent misinterpretation of data
   ii. To help the Government in Decision and Policy making
   iii. For easy and transparent access to data

MEDIA OUTREACH

CURRENT SCENARIO

- Indian media scape has become a battle ground of ideologies which creates misinterpretation, fake news and panic among general public during this pandemic. Mainly corporate ownership overthrows autonomy of journalism and freedom of press.

https://www.epw.in/engage/article/media-time-covid-19

- Media Cell activities are largely related to Press Releases, releasing Advertisements and organizing Press Conferences, Exhibition and Conference etc.

https://labour.gov.in/media-cell-0

- Unless accompanied by immediacy, and in some cases, fear and panic, articles about health rarely make it to the front pages of the newspapers

https://scroll.in/article/990497/with-covid-19-pandemic-indian-medias-inadequate-attention-to-the-health-beat-has-been-exposed

- While overload of information is a dominating feature of the information age, the Covid-19 pandemic has given rise to a new phenomenon called infodemic. The World Health Organisation (WHO) has described it as “second disease” accompanying the pandemic.
- Trust in news media was rated significantly higher than information received on social media
- An analysis of 112 million messages relating to the pandemic in 64 languages, conducted by Bruno Kessler Foundation, showed that 40% of these messages came from unreliable sources.
- Another study by the COVID-19 Infodemic Observatory found that 42% tweets related to the pandemic were produced by bots and 40% of them were unreliable

https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7381929/

- Early announcements during disasters by coordinating with agencies like IMD (INDIA METEOROLOGICAL DEPARTMENT)is made by central government .No trace of assistance of media in NDMA(National Disaster Management Authority) website is seen which can act as secondary provider of information .

  https://ndma.gov.in/

- The news which are broadcasted and printed does provide only informations related to the pandemic or disasters but are not solution -driven .The authenticity of the reports are not evaluated and also evidences for the same are not being published.This is causing misunderstanding among public and trust-ability on media is deteriorated

Recommendations
1. To setup a dedicated media cell

- Dedicated media cell partnered with NDMA(National Disaster Management Authority) for instant support for better delivery of safety announcements and warnings to threatened communities.
- An independent body without any political and bureaucratic influence.
- The media cell will comprise of senior editors, journalists, media agencies and volunteers.
- The daily press conference should be live telecasted with real time data and also the same to be published in newspaper, electronic media.
- Collaboration of media cell with press counsel of India or Indian news paper society to track fake news and intentional misinterpretation of news.
- Verified and timely sharing of information to general public to sensitize them and provide them with factual statistics which reduces the misinterpretation of news.
- This was successfully implemented in Korea, USA, New Zealand and Delhi during the Covid pandemic

2. Panel of experts to be formed

- Panel of experts will comprise of eminent experts from the industry, academia, government, medical fraternity and scientists .
- Panel of experts will have regular(daily) interactions with media cell and there will be a daily press briefing on relevant issues.
- Adding mental health session in various news channels can help people to overcome the stigma of pandemic.
- Publicizing awareness in regional news papers and providing a space where individuals and entire communities can tell their stories.
- China and Kerala implemented this successfully.

3.Media Analytics center(MAC)

- Media analytics center will help in collating and disseminating of data for the customization of stories by media cell.
- Team of data analysts will analyze the data, give comparative analytics and share it with media cell.
- Media analytics center will seek regular feedback from general public.
- Media analytics center to partner with Social media platforms like LinkedIn, Facebook, twitter etc., to disseminate and collate data on real time basis.
- Usage of tools like Big Data, Block chain and Data Analytics for better understanding of public perceptions which results in authenticated broadcasts and Human interest stories.

Thank You