

# Devising COVID19 Response Strategies

*National and Subnational*

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## Introduction

The world has recently witnessed an outbreak of COVID-19 (SARS-COV-2) with a very large number of cases, many of which are in India. While the recovery rate has been consistently improving, and the death rate is significantly low, the country is not close to its peak. The number of cases at the national and sub-national levels, both across the world as well as within countries, have thus far varied considerably, but based on what we know and given the nature of the virus, it appears to be principally a timing delay, and it is highly likely that anywhere between 20 to 50% of the population is eventually likely to get infected irrespective of the level of preparedness of the country or the state (Imperial College, COVID19 scenarios). However, what will vary considerably, after accounting for differences in age profiles, and will be critically dependent on the level of preparedness, will be the eventual death rates. This suggests that while the current measures to slow the spread of the virus need to continue, the time thus gained needs to be utilized optimally to rapidly build the capacity of health systems, and to the extent possible, carefully protect those sub-populations that are particularly vulnerable (the elderly in this case) until more permanent means of addressing this contagion, like a vaccine, become widely available.

## Characteristics of the Disease

To devise an effective response strategy, it is extremely important to understand the disease better. COVID19 has **three important characteristics**:

1. **It is a respiratory virus**: The virus spreads essentially through respiratory droplets and contact routes which makes universal masking, frequent hand washing, and social distancing important to contain and slow its spread.
2. **Elderly population is extremely vulnerable to the virus**: Mortality rates start to climb amongst those infected (the Infection Fatality Ratio) quite steeply after they cross the age of 60 suggesting social protection measures for the elderly can have a beneficial impact on mortality by keeping as many of them infection free.
3. **A large number of cases fall in the mild to moderate category**: An analysis by Chinese Centre for Disease Control suggests that out of the total number of patients, almost 80% could recover at home with mild to moderate illness and, 15% could be treated for breathlessness and hypoxia

using oxygen therapy in primary care settings, and only about 5% may need hospital-based intensive care or mechanical ventilation. Given the high population-proportions likely to be infected it is important to note that even 20% is likely to be large number, and if the needed care is not provided in a timely manner, the mortality rates could rise quite considerably (Baker et al., 2020).

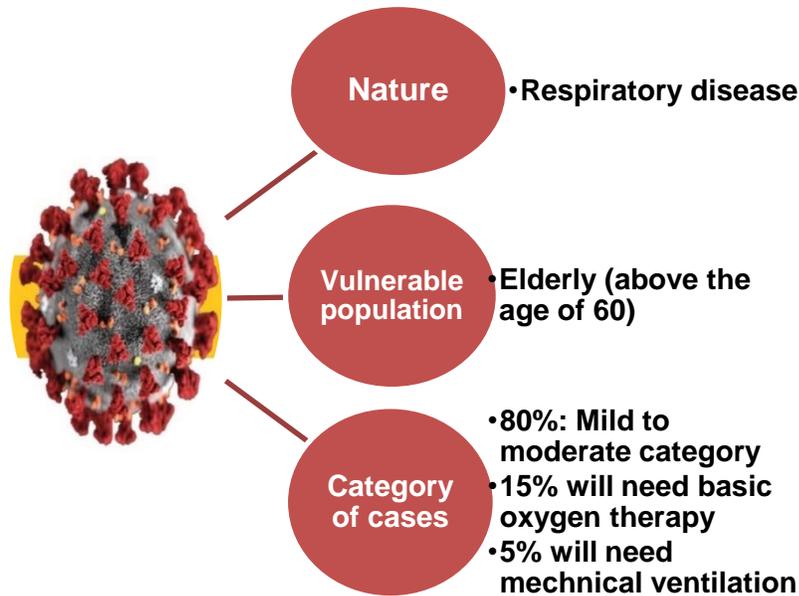


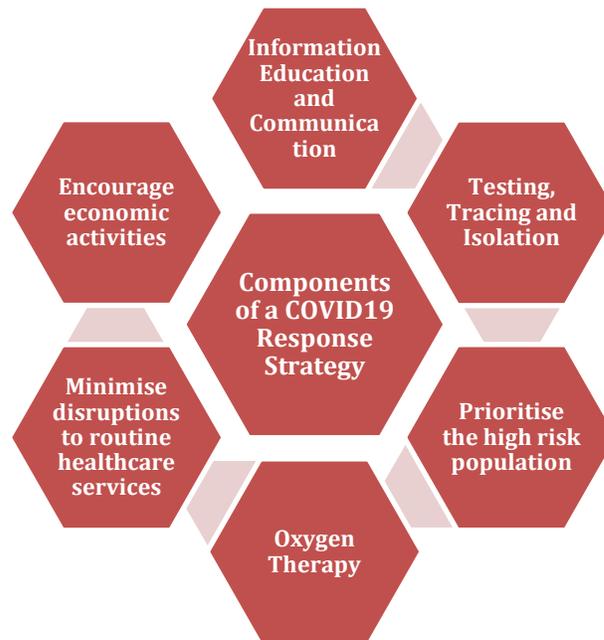
Figure 1: Characteristics of the disease

### Important Components of any Response Strategy

The three disease characteristics outlined above suggest that any strategy that is followed at a national or sub-national level must be devised around **these 6 important components**:

1. **Promoting universal compliance through Information Education and Communication (IEC):**  
Given the nature of the disease and its mode of transmission, it becomes extremely important to inform, educate, and communicate to people the nature of disease, the early recognition of symptoms, the Dos and Don'ts, debunking myths, Call-in and helpline numbers, the importance of masking, safe sanitation hand hygiene, respiratory hygiene, and practicing social distancing. This can be done using mass media campaigns, posters put at suitable places, Interactive Voice Response systems (IVR), with the help of volunteers, NGOs, community leaders, anganwadi workers, and primary healthcare providers (PCPs), and in regional languages to remove barriers to information sharing and fight panic with information.

2. **Prioritizing the protection of vulnerable populations like elderly, homeless and migrants:** Dispersed strategies targeting the entire population are difficult to implement and sustain over the longer run. Interventions sharply focussed specifically on vulnerable populations such as the elderly are therefore essential. These could include strict quarantine for senior citizens and other vulnerable groups and tagging of households with vulnerable members for regular follow-ups.
3. **Rapid Testing, Contact Tracing, and Isolation:** According to studies, one infected person, without any intervention, can infect on average 2-3 people. Therefore, a comprehensive rapid testing, contact tracing, and isolation strategy becomes important to contain the spread of the virus.
4. **Ensuring widespread availability of Oxygen Therapy:** Studies indicate that for most of the critical category cases, simple oxygen therapy has proven to be effective, especially in low resource settings which suffer from an acute shortage of ICU beds and allied services (Dondorp et al., 2020; Begley, 2020; Nacoti et al., 2020).
5. **Minimizing disruptions to routine healthcare services:** Preventing the disruption to routine healthcare becomes critical given a vaccine for COVID-19 would at least take one year. According to a study on data released by the National Health Mission, around 100,000 to 200,000 children missed routine vaccinations during February and March. There was a decrease in treatment of TB, intervention given to pregnant and lactating mothers decreased and claims under PM Jan Arogya Yojana fell substantially. Therefore, it's critical to ensure that there are no restrictions placed on inpatient and outpatient care, lab tests, vaccinations, and mental health services.
6. **Encourage economic activities:** Economic activities need a push, through government packages and targeted interventions, to ensure that COVID-19 induced economic and social challenges like hunger, economic and social poverty, and unemployment do not add to the existing disease burden of the country.



*Figure 2: Components of a COVID19 Response Strategy*

### **Response strategy**

Incorporating the above 6 components, the four response strategies that can be implemented are as follows:

#### **1. High level of Engagement with the Community**

- a) **IEC through an extensive local community engagement and outreach:** Direct engagement with local network of NGOs, civil society organizations, and the private sector, to promote universal compliance at the household level; identify and protect the vulnerable like elderly; identify and equip people with information on healthcare and public and private testing centres; and sustain economic activities to reduce COVID19 induced burdens. This can be done by identifying operational NGOs and private actors from local databases and making them a part of the core team.
- b) **Clear guidelines to be given to the community** in different languages catering to all sections and regions, to practice protection measures like social distancing, staying indoors, minimizing contact with the vulnerable population, adopting frequent hand washing, and maintaining proper hygiene and how to manage and report symptoms.
- c) **Building capacities of PCPs, Anganwadi and ASHA workers, healthcare workers handling specimens** by leveraging on technology and the expertise of NGOs and organisations who have extensively worked with the government in the area of identifying and responding to

community spread, household level screenings, community based testing, information, education, and communication methods, and maintain continued access to routine healthcare services.

- d) **Mental Health Care for the PCPs and Patients:** Protecting the physical health of the primary care providers and patients is important but so is the mental health given the pandemic will take some time to complete its course. This can be done by engaging with various mental health professionals and centres.

## 2. Preparing the Local Healthcare System

- a) **Strengthening the existing healthcare infrastructure:** With the help of local NGOs and local administration initiating a clear mapping of the entire healthcare infrastructure in the community, including PCPs, transportation mechanisms, and nearest hospitals so that each member of the community is mapped to an existing primary care centre. In order to maintain an adequate patient to staff ratio, the definition of PCP could be expanded to include trained nurses, retired doctors, doctors who decided to exit the profession post-marriage, dentists, and formally qualified doctor in Indian Systems of Medicine with at-least a Bachelor's degree in the field (Ayurveda, Unani, and Siddha). In case of rural settings, they can be provided with a small place, phone, and internet if they don't one already. PPEs in the form of masks, face shields, sanitizers, hand gloves would need to be made available in order to strengthen infection control.
- b) **A Standard Operating Procedure (SOP)** on safety precautions, infection control at clinics, institutional and home quarantine guidelines based on severity of cases and to maintain routine services would need to be developed and followed. It is important to ensure that cleaning and disinfection procedures are followed consistently and correctly. For example, all the surfaces in health-care facilities would need to be routinely cleaned and disinfected, especially high-touch surfaces, and whenever visibly soiled or if contaminated by body fluids.
- c) **Oxygen therapy** would need to be adopted as the first step to treat low levels of oxygen, especially to avoid the need for mechanical ventilation. There is a growing concern that mechanical ventilation capacity may be in short supply in several parts of the country. Various studies have highlighted the critical importance of oxygen therapy, making it important for the PCPs to immediately review their current oxygen availability at facility level, assess the supply and transport capacity of oxygen cylinders (often available in the largest town nearby), and availability of oxygen concentrators at the facility (which generate oxygen from air, and therefore do not have logistics issues).
- d) **Minimizing disruptions to routine healthcare services:** This will need to be ensured using multiple mechanisms.

### 3. Working at the National and State Levels

- a) **Developing a targeted Income Support Program:** In these unprecedented times, cash to the most vulnerable can be a better way to help them. Cash in hand allows them to buy the necessities as per their needs and provide them some confidence to navigate through the crisis. A carefully designed targeted income support to the bank accounts of the most vulnerable using the existing digital infrastructure of JAM, and banking correspondents is required to ensure their survival and well-being. Further, access to zero/low interest rate loans would also be useful.
- b) **Implementing a longer-term economic revival program:** The coronavirus epidemic has led to both supply and demand shocks. Business disruptions due to containment measures have lowered production, creating supply shocks especially in manufacturing. And the reluctance of consumers and businesses to spend due to income loss, heightened uncertainty and fear of contagion has lowered demand. The need of the hour is a targeted economic policy aiming at longer term revival. The policymakers need to implement substantial targeted fiscal, monetary, and financial market measures to help affected households, businesses and the financial systems. The sector wise interventions can be as follows:

Sector	Policy interventions	Case Models
<b>Households and Businesses</b>	Fiscal interventions like cash transfers, wage subsidies, rent deductions, loan extensions and tax relief, helping people to meet their needs and businesses to stay afloat (MSMEs in manufacturing and services). Unemployment insurance for the people laid off	Italy: Tax Reliefs Korea: Wage Subsidies, China: Waiving off social security contributions of the businesses
<b>Banks and NBFCs</b>	Greater liquidity to banks' lending to MSMEs Targeted temporary credit guarantees	Korea: Credit guarantees for affected SMEs and extension of loan maturities.

*Table 1: Potential Policy interventions for various sectors*

### 4. Implementing Rapid Testing, Isolation, and Contact tracing

- a) **Testing:** At present the COVID19 testing is done on high risk population (symptomatic, first degree contact with infected patients, healthcare professionals and people with a travel history to affected regions). Therefore, it is impossible to obtain the true prevalence of COVID-19 in the

population given at-risk individuals are not representative of the general population. Obtaining the true prevalence is important to determine the mortality and morbidity risk in the population and frame an appropriate response to COVID19. Therefore, there is a need to build an extensive robust testing infrastructure. One strategy that can be adopted is a random risk-weighted sampling strategy for testing at the district/state level over the currently followed which involves testing only at-risk individuals and extrapolating the data to determine the prevalence. This can be done by integrating a COVID-19 centric data collection within the National Family Health Survey infrastructure (NFHS) to keep the operational costs low.

b) **Isolation:** Currently, the government’s “cluster containment strategy” is to isolate geographic areas reporting one or more positive cases. While this strategy is intended to contain the spread of the infection, it is not clear that it is, because of a lack of a clear criteria, and it relies on one or a group of individuals first testing positive. Moreover, containment strategy followed for a long time with extreme population wide social distancing and mobility restrictions can be very harmful to the economy and livelihood. The strategy can be effective for a short time but cannot be sustained for a longer term. The long-term approach needs to be shifted to shielding the vulnerable or high-risk population and moving from targeting the general population to only vulnerable population. Based on evidence that the infection risk increases with age and pre-existing conditions, the definition for high risk population could be extended to include categories like people above 60, homeless and migrants, people living with NCDs, HIV TB and immune suppressing conditions. Further, an effective three level transmission shielding arrangement for the vulnerable as outlined below can be adopted with some assumptions and precautions. This can be continued for a longer period with the help of local community networks to provide for essential services and facilitate behaviour change, until a vaccine or cure for the disease becomes widely available.

Isolation	Description	Application
<b>Household-level shielding</b>	A room in every household demarcated for high risk member and isolation strictly enforced.	Multi room houses, multi-shelter compounds in rural and urban settings.
<b>Family level shielding</b>	2-3 families swapping to put all the high-risk members in one house.	All the settings, particularly urban.
<b>Sector level isolation</b>	Sections of the settlement are put aside for groups of high-risk 50-100 people	Relief camps.

*Table 2: Three level transmission shielding arrangement*

- c) **Contact Tracing:** The contact tracing must begin with involving the infected person and his community to suppress the transmission. To identify the contacts in different settings, a detailed interview shall be conducted with the infected person and other stakeholders depending on the nature of the setting. Identification shall be followed with informing and educating the contact about the rationale, the quarantine provisions, dos, and don'ts, tracking symptoms, and the way forward.

Urban	Rural
Relatively difficult due to population density	Relatively easier to trace.
Community engagement models to identify contacts in different settings. It can be achieved with the help of community leaders, youth bodies like NSS, NCC, NGOs, and CSOs in collaboration with dedicated field staff for tracing.	The network of Anganwadi, ANMs and ASHA workers, trained staff at PHCs can be leveraged for contact tracing in rural areas. If a person from a rural area is infected, the PHC of his area can be notified and the network of frontline workers can identify contacts and educate them.

Table 3: Contact Tracing for rural and urban areas

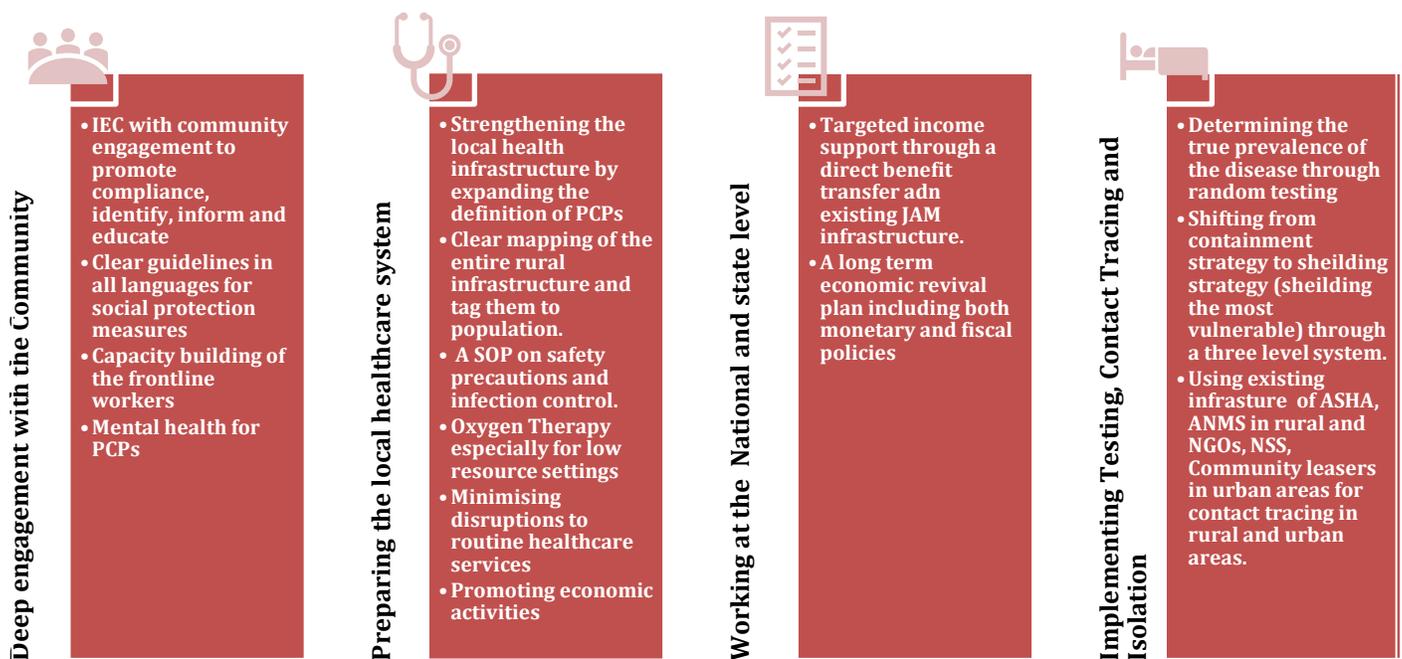


Figure 3: COVID19 Response Strategy

## Conclusion

The number of COVID19 cases are consistently rising across the globe. While some countries are past their peak, India is yet to witness its peak. Therefore, an effective response strategy at the national as well as state level becomes critical to reduce the number of infection and infection mortality rate in the longer run. India will have to cautiously work towards controlling both the social and economic impact of COVID19. Devising an effective response strategy incorporating the above outlined five components, in collaboration with all the stakeholders at different levels can be the way forward to mitigate the crisis and emerge out of it.

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