



Managing the COVID-19 Situation Post Full Lock-Down

Balancing management of virus transmission and return to economic activity

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AT A GLANCE

The world is beset by what is clearly the worst pandemic of the past century. Developed and developing nations are struggling with the spread of the n-Corona virus and the attendant risk to human health and lives. Complete or near-complete lock-downs with aggressive testing and ramping up the capacity of the healthcare system to deal with the situation has emerged as a measure that many countries have adopted. Developed, affluent economies have coupled this with large economic relief measures – to individuals and companies – to help mitigate the significant economic impact of these disruptions.

For emerging market economies such as India, a prolonged lock-down might lead to several additional challenges to peoples livelihoods, nutrition levels etc. Hence for India it is imperative that we get back to a form of regular economic activity, rapidly, while controlling the spread of the contagion below a certain threshold that can be supported by our healthcare infrastructure and thereby reduce mortality rates in the country. In this article we share thoughts on what measures need to be considered in this context.

DISEASE CHARACTERISTICS, URBAN CONCENTRATIONS AND THE NEED FOR LARGE SCALE TESTING

The unique characteristics of the COVID-19 virus are important to understand. Firstly, over ~20 percent of those infected are asymptomatic and can transmit the contagion. Secondly, onset of symptoms takes about four days and can even extend further and hence up until the symptoms manifest themselves the infected person can transmit the virus to several people they come into contact in this period.

The other consideration in India is the significant urban density of our population which accompanied with lower median income levels necessitates common living facilities and the use of public transport, which further accelerates the possibility of widespread transmission.

These characteristics highlight the need for large scale and continuous testing to control the transmission of the disease. Testing will help us understand the trajectory of transmission, identify key hotspots, isolate individuals, detect communities which have gained immunity and provide the information to take timely interventions such as lock-down and distribution of healthcare supplies.

ECONOMY CHARACTERISTICS, URBAN CONTRACT SERVICES AND THE IMPLICATIONS OF A LOCK-DOWN

We have an economy which has a high share of small and medium enterprises, self-employed and contractual workers. In sectors such as manufacturing, trade and construction we have almost ~60 million workers which are casual labour. Several workers migrate from villages and small towns to large urban centers and undertake jobs in urban services. An extended period of full lock down would adversely affect them, leading to wealth destruction and loss of ability to provide basic sustenance for their respective families and enterprises.

As a result, till the world finds a prophylactic, or a curative set of medicines, or some act of nature or climate renders the virus ineffective—it is vital that we tightly control the spread of the contagion and understand the trade-offs of a range of lock-down measures and its impact on disease transmission.

India has conducted ~127,919 tests till April 08 of which ~5114 have tested positive i.e. an incidence rate of about four percent. While this number is quite low compared to what we see in the US and Europe (20-40 percent), India currently has a very low testing rate of ~95 tests / million population. The number stands at 3000-5000 for countries like UK and US while countries such as Singapore, South Korea

and Germany have been able to ramp up testing very quickly and reach very large numbers (7000-10,000 tests / million). Hence the need of the hour is to significantly ramp up our testing rates and requisite capabilities to definitely ascertain the spread of the contagion and hence determine the lock-down measures that can be opened up to restart the economy.

Objectives

With the above as a starting context we come to the real problem we have to solve in India—we need to get back to a form of regular economic activity, rapidly, while controlling the spread of the contagion below a certain threshold that can be supported by our healthcare infrastructure and thereby reduce mortality rates in the country.

Critical Elements in the Solution

The objectives behind the 21 day full lock-down period which commenced on the 25 March 2020, is to stem the transmission of the disease and reduce the increase in the number of infected people through isolation at home or through quarantine in hospitals. This time period would also allow the time needed to strengthen the necessary supplies and infrastructure in the health care sector.

One of the most critical data points to keep track during this period is the marginal incidence rate (infections / tests each day). As the testing rates increases, we will have a broader sample of population and this would provide a good baseline especially over the last week of the full lock-down period with regard to the domestic spread of COVID-19.

As the full lock-down opens up, there are four parts to our proposed solution:

I. DE-AVERAGED APPROACH ACROSS THE COUNTRY

A district-wise heat map for the country and a block-wise heat map for the state—daily updated based on testing results and recovery cases—should be used to identify new “hotspots” and segment districts / neighborhoods. The information for the segmentation should include the absolute no of COVID-19 cases and the growth rate observed over time as the testing is increased across locations. Basis this information the country can be divided across four spectrums—Dark Red, Light Red, Orange and Green.

- a. **Dark Red zone (Significant number of cases / High growth rate):** We should follow a 4 week full lock-down approach, prioritizing health care resources, critical care facilities and personnel in these areas from across the country. We should ensure delivery of essentials at literally every door so that people can be sequestered fully through this period. We can avoid mass testing in this zone (to prioritize test kits) with the understanding that community transmission has probably started and people should follow protocols assuming all infected. These areas remain under full border lock-down with no people transference enforced through administration and para military forces. At the end of the four week period, undertake large

scale sample testing to ascertain whether the virus has been contained and the zone can move to a lower risk category.

- b. **Light Red zone (Several cases / High growth rate):** We should undertake mass door-to-door testing (with health care workers visiting homes) to discover symptomatic and asymptomatic cases so that one can isolate people who are infected and quarantine those in contact with identified cases to control the spread. It is critical that we also constantly further demarcate these zones into smaller neighborhoods through mass testing and apply lock-down procedures with no people transference across the sub-zone borders.
- c. **Orange Zone (Select cases / Low growth rate):** In places where we have few cases detected, follow at home lock-down for 14 days and symptom based testing and quarantining in that period to stamp out the contagion. These are potential future hotspots and hence the need to quickly stop the spread at its start and applying stringent surveillance protocols.
- d. **Green Zone (No cases):** For these zones there are no lock down procedures but basic safety protocols are in place i.e. physical distancing, avoiding non-essential travel, elders remain in the house and personal hygiene norms continue to be adopted etc. People entering the green zone from outside have a quarantine period of 14 days and would include people only travelling into these zones for work reasons.

2. AN AGILE TESTING STRATEGY WITH AGGRESSIVE TRACING LOGIC ESTABLISHED TO SLOWLY ERADICATE OR KEEP THE CASES AT A MINIMUM TILL A VACCINE IS AVAILABLE

- a. **Proactive mass testing with door-to-door test collection:** We need to plan for a capacity of 60,000-100,000 tests / day. This is 5-10X increase from the current status. The tests need to be made free for use for people who cannot afford the same to ensure the price is not an inhibitor in people reaching out for testing. The test kits, the test facilities and the logistics of the supply chain for the same with real time reporting needs to be in place and prioritized basis the above zone definitions on where they are most needed.

Serological tests, once available can be used in zones coming out of a full lock down period to check for virus resistance and also selectively in cases where there is increased spread and we have insufficient kits available for direct testing.

Pooled sample testing, once approved could be used in locations where there is less evidence of contagion spread to form an initial view through the triage method. Basis the first set of results one can continue with this pooled sample methodology further or move towards individual testing.

- b. **Aggressive contact tracing:** We need to ensure adoption of the Aarogya Setu app which has just been launched, similar to countries like Singapore, China, Korea etc. which have used mobile applications to digitally trace potential contacts of a confirmed COVID-19 patient using Bluetooth and

GPS technology. The adoption of this app needs to be significantly enhanced by both authorities and civic organizations communicating to people and regular campaigns in districts to ensure word-of-mouth spreads and we exhort people to download and install the app.

3. DEVELOPING A CUSTOM STRATEGY FOR DENSE COMMUNITIES AT RISK

One of the highest risk social communities are people living in dense urban clusters for example, “chawls”. Customized interventions to suit these clusters need to be put in place. These include (but not limited to), creating smaller cells within urban settlement for example, half the floor of a chawl to be dedicated to one set of shared sanitary amenities, ensuring daily supplies reaches the urban cluster and people do not have to go out of their locations to get basic rations etc. A similar approach needs to be planned for factories and project sites using concepts of compartmentalization, rigorous screening and isolation, creating breaks between shifts for sanitization, avoiding common canteen and bringing food packs to workers at their stations etc. In some cases where the possibilities exist temporary workmen housing should be created within or very proximal to the factory premises. Dedicated transportation should be provided to and from the site to avoid mixing of factory workmen with surrounding city dwellers and to ensure a contained ecosystem continues to work without risk of contamination.

4. PHASED OPENING UP OF THE ECONOMY

Post full lock-down, one has to identify the set of activities that can commence which has a limited impact on virus transmission but create a large positive economic impact. This include activities beyond the essential services which are already operational and would continue to function.

- Some measures such as schools and universities remaining closed till summer vacation, prohibition of large gatherings, closure of religious and recreation sites, offices to continue working remotely where possible etc. should continue to remain in force as they minimize large scale people contact and have limited impact on economy revival.
- Green Zone areas can function with economic activity restricted within the zone / across Green Zones, while Red Zone areas should continue to be under lock down.
- Even within / across Green Zones protocols should be established for public transportation, restaurants, shops etc. on the absolute number of people at one place, physical distance to be maintained, use of digital payments etc.
- Factories and Project sites which are either remote or outside Red zones can open up with continued stringent monitoring and control. Temporary medical set-up (for example, fever clinics) should be setup at the sites to pre-screen individuals and to quickly limit any potential risks.
- Logistics (for both essential and non-essential products) should be opened with clear communication across States and districts on vehicular movement

and permits. Locations which are Red zones can be avoided and alternate routes established so that one continues to avoid contact in high risk areas. Additionally for the logistics operators demarcate specific locations across the highways for food and overnight stay along with safety and enforcement measures (for example, regular highway patrol checks) which are also communicated to the logistics operators.

- Upstream value chains (for example, raw materials etc.) which form part of essential services need to be opened with standard safety protocols. Labor for these facilities should be restricted to workers from the same district.
- Mandis and agricultural market places need to be operated with minimal staff and pre-agreed schedules for buyers and sellers, carefully coordinated through outbound and inbound calling services to ensure sales of farmer produce takes place unhindered with standard safety protocols foremost amongst them being prevention of overcrowding.

A phase-wise opening of the lock-down basis the zone-wise approach with requisite testing and surveillance mechanisms should be followed to curb the spread while ensuring that economic activity resumes steadily. Scaling up our testing capabilities with protocols around mass testing etc., customizing strategies for the vulnerable densely populated communities and continuous monitoring and review of the evolving situation will help facilitate opening up of the economy at the earliest without crippling the healthcare infrastructure. This will be critical to save both, the lives and livelihoods of Indians through these testing times.

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