COVID – 19
Contingency Plan and a Phased Lockdown Exit Strategy

Recommendations to the Government of Karnataka

Centre for Open Data Research (CODR)
(Analytical Arm of Public Affairs Centre)

Public Affairs Centre
April 2020
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Introduction

This contingency plan and lockdown exit strategy has been prepared by the Centre for Open Data Research (CODR), the analytical arm of the Public Affairs Centre, and is meant to serve as a guidance document to assist the state government in evidence-based decision making in its ongoing response. The document has been prepared on the basis of data available in the public domain. It is not intended as a comprehensive, complete report, but rather serves as a guide that points to broad data-based trends that might prove useful in decision-making.

Karnataka reported its first case of COVID-19 on March 9, 2020 from Bengaluru, followed by two cases on March 10 and a death on March 12. The Karnataka government acted proactively and locked down the state borders, initiated closure of schools and colleges, IT companies were asked to work remotely and many industries were asked to voluntarily shut down or work with half the workforce. The efforts were augmented with the health department’s quick response, and coordination with the central government. The efforts demonstrated results with the incidence remaining in single digits till March 24 until the Tibilgi returnees increased the burden of disease. Figure 1, demonstrates the day wise incidence of cases in Karnataka against Maharashtra, Kerala, Tamil Nadu, Andhra Pradesh, Telangana. The incidence of and the spike of cases in Karnataka post March 24, 2020 has also been better managed than the other southern states with the daily incidence of cases below 30.

Despite the efforts of government and health department in containing the COVID19, the ground situation remains fragile and the single objective should be to prevent community transmission. The Karnataka government has to make a difficult decision on whether to lift the lock down on April 14, 2020 or extend it further, and if so in what manner. The weight of the evidence would suggest that it would be better to continue the lockdown considering new cases are being added on a daily basis, and as a precaution against further spread, thus risking more lives. Restarting the economy and the return to normalcy should be considered only after April 30, 2020.

In this document Public Affairs Centre (PAC) and Centre for Open Data Research (CODR) provide an exit strategy based on an analysis of the data that is available in the public domain. The first section of the document provides a descriptive analysis with visualisation of data. In addition, an attempt has been made to predict the number of cases up until end of May 2020. The second section of the document details the principles followed in preparing the exit strategy and the last section talks about strategies to be adopted for permitting various activities at different zones in a phased manner, based on risk assessment.

Figure 1: Trajectories of Case Diagnosis
Contingency Plan and Exit Strategy

The first principle in developing this strategy is the containment of the number of active cases, minimising the spread, and preventing community transmission, thus insulating rural Karnataka from the high risks of the pandemic. The second principle is to focus on the disadvantaged and vulnerable socio-economic groups, whose livelihoods are mostly in the informal sector and are based on daily wages. Therefore, after a further two-week lockdown during April 15-30 2020, a phased commencement of economic activity thereafter, is recommended. Care has been taken to consider the issues of the health care workers who are working day and night not visiting their family and children for weeks and senior citizens who are living alone without any family support. Both these categories are highly vulnerable to contracting the virus.

Summary of findings and Recommendations:

This contingency plan and lockdown exit strategy is intended to serve as a guidance note for evidence-based decisions that the state government might consider in the ensuing six weeks. The key findings based on the analysis of data available in the public domain and recommendations for an evidence-based and calibrated response in summary include:

Findings:

1. Six districts constitute the red zone of high risk hotspots that need special attention, enforcement and district-specific strategies. These include Bangalore, Mysuru, Bagalkote, Kalburgi, Belagavi, and Dakshina Kannada.
2. Projections based on the rate of incidence, suggest that the state will likely reach a peak of 792 cases of COVID19 with an addition of 586 incident cases from 10th April till 29th May 2020.
3. The projections of the rate of COVID19 infection suggest that the daily growth rate will stabilise at 2% per day from 20th May onwards.

Recommendations:

1. Based on the evidence of the spread of the virus, mortality rates and the future risk assessment, the lockdown should be extended till 30th April.
2. Steps be undertaken to further strengthen the state government’s contingency plan, insofar as the health workers and hospitals are concerned in the red zone districts, with immediate effect, as suggested in the exit plan.
3. The return to normalcy and the resumption of economic activities should be calibrated and in a phased manner commencing 1st of May 2020, based on the essential-non-essential and high risk-low risk variable matrix analysis, as proposed in the exit plan.
4. Specific steps will be necessary to ensure the care of senior citizens and the elderly, and to provide for their daily necessities. This responsibility must be delegated to the local governments (ULB/GP).
5. The scope of the state response must now expand to deal with the substantive migrant populations requiring mainstream attention. The responsibility must be delegated to the local bodies (ULB and GP). Several measures as set out in the exit plan must be initiated immediately.
Contingency Plan and Exit Strategy

Section – I

Clustering and Classification of Zones

Methodology

An exploratory analysis of the district level data shows that while number of active cases has remained high in Bangalore Urban, Mysore and Dakshina Kannada; district-wise mortality is noticeably high in Bagalkote, Tumkur and Kalburgi. Similarly, district-wise growth of positive cases is high in Bagalkot and Bangalore Urban, but the Tabligi Jamaat returnee cases are bringing in front few districts such as Bidar and Belagavi.

Running a cluster analysis of the publicly available COVID19 data on active cases and mortality, the CODR has identified these clusters in terms of high active cases, high mortality cases, low/moderate active cases and no cases. A brief description of the clustering strategy is provided below.
Cluster Analysis

Identification of vulnerable districts:

To identify the hotspots, a combination of exploratory analysis and cluster analysis algorithms have been used. For exploratory analysis, spatial gap analysis of active cases, mortality rates, growth rates and Tabligi returnee cases has been undertaken. The Cluster Analysis, a statistical technique based on unsupervised learning analyses, patterns the data and groups the subjects into logical clusters, depicting similar behavior, has been used. The indicators used for cluster analysis include number of active cases, number of mortalities, number of travel cases, number of local contact cases, number of Tabligi returned cases and the average growth rate since April 1st 2020. For the analysis, more weight has been given to the active cases, mortality numbers and growth rates.

The analysis resulted in 3 clusters

**High Active Cases:** Districts: Bengaluru and Mysore

**Features:**
- High Active Cases
- High Imported and Local cases including returnees from the Tabligi convention
- High new cases but low growth rate
- Mortality Rate is also low

**High Mortality Cases:** Districts: Bagalkote, Tumkur, Kalburgi

**Features:**
- High Mortality Rate
- Low Active Cases
- Low Local and Imported cases including Tabligi returnees
- Low new cases but high growth rate

![Figure 3: District-wise Clusters in Karnataka](image)
Based on exploratory, cluster analysis, density, and spread of infection (Table 1), the model identified the hot spots, high risk, low risk zones, and no cases zones.

<table>
<thead>
<tr>
<th>Red Zone</th>
<th>Yellow Zone</th>
<th>Green Zone</th>
</tr>
</thead>
<tbody>
<tr>
<td>High Risk Districts</td>
<td>Low Risk Districts</td>
<td>No Cases Districts</td>
</tr>
<tr>
<td>Bidar, Uttara Kannada, Bengaluru Urban, Dakshina Kannada, Mysuru, Chikkaballapur, Belagavi, Bagalkot</td>
<td>Bellari, Dharwad, Gadag, Davanagere, Udupi, Kalburgi, Tumkur, Kodagu, Mandya, Bengaluru Rural</td>
<td>Vijayapura, Haveri, Chamarajanagar, Chikkamagaluru, Chitradurga, Hassan, Kolar, Koppal, Raichur, Ramnagara, Shivamogga Yadgir</td>
</tr>
</tbody>
</table>

**Features:**
- Low to Moderate Active Cases
- Low Mortality Rate
- Low growth Rate and new cases
- Some returnees from Tablighi convention
Projections on COVID19 Cases

Based on the data available on the occurrence of incidents of cases on a daily basis across the state, the percent growth rate was computed from March 9 to April 9, 2020. The following graph shows the growth rate over 31 days along with the cumulative incidence till April 9, 2020.

It can be observed that the rate of change is consistently reducing over the period of the last one month. One can also observe that the rate has reduced much more during the post lock down period compared with pre lockdown period. To confirm the above hypothesis, t-test was run to evaluate the impact of lockdown on daily rate of COVID19 cases pre-lockdown (March 9 to March 24) and post-lockdown (March 25 to 9th April). The P Value for t-test was 0.014 (SD-10.42, 95% CI 10.86 – 7.3); demonstrating the lockdown phase was effective in reducing daily incidence rate in Karnataka.
Looking at past data (9th March 9 to April 9) the pattern shows non-linear curve model suits better than linear, and thus asymptotic functions $f(x) = ax^n/(b+x^n)$ found to best fit the observed value. Figure 5 depicts fitting of asymptotic curve with the observed value of growth rate.

Using the above model projection of future growth rates was made and the daily incidence rate from April 10 onwards to May 29, projected. The projections of the rate of COVID19 infection suggest that the daily growth rate will stabilise at 2% per day from May 20 onwards.

Projections based on the rate of incidence, suggest that the state will likely reach a peak of 792 cases of COVID19 with an addition of 586 incident cases from 10th April till 29th May 2020.
Contingency Plan

The Contingency plan is created in view of the numbers from projections derived from the model mentioned above and stratified into three zones based on the risk assessment. The plan includes steps necessary to improve the readiness of the health system, and the readiness of emergency services. It does not however deal specifically with the requirement of medicines and ventilators (this is best left to the department to assess).

<table>
<thead>
<tr>
<th>Zones</th>
<th>Contingency Plan</th>
</tr>
</thead>
</table>
| Red Zone   | 1. Train and hire AYUSH physicians to meet the demand for physicians  
2. Procure 1000 rapid testing kits from ICMR and MOHFW per institution  
3. Train final year students from Nursing colleges on isolation and quarantine protocols and “Revised National Guidelines for Management of COVID19” and keep reserve resources for worst case scenario  
4. Procure 500 PPE kits for healthcare workers and hospital staff per institution  
5. Train attached staff to Private Hospitals with ICUs and provide with consumables and PPE Kits to manage additional cases or sudden spike in cases  
6. Invite all small private clinics to attend webinars on awareness, identification of COVID19 patients  
7. Avoid burnout of security and emergency services, rope in volunteers via online voluntary recruitment portals  
9. Ensure the availability of extra stock of consumables like gloves (surgical and examination), IV set, Ringers Lactate, Face shield, Protective googles, N95 Masks, Green gowns, Biohazard bags, Hand Sanitisers |
| Yellow Zone| 1. Train and hire AYUSH physicians to meet the physicians demand  
2. Procure 500 rapid testing kits from ICMR and MOHFW per institution  
3. Train final year students from Nursing colleges on isolation and quarantine protocols and ”Revised National Guidelines for Management of COVID19” and keep reserve resources for worst case scenario  
4. Procure 100 PPE kits for healthcare workers and hospital staff per institution  
5. Train attached staff to Private Hospitals with ICUs and provide with consumables and PPE Kits to manage additional cases or sudden spike in cases  
6. Invite all small private clinics to attend for webinars on awareness, identification of COVID19 patients  
7. Ensure the availability of extra stock of consumables like gloves (surgical and examination), IV set, Ringers Lactate, Face shield, Protective googles, N95 Masks, Green gowns, Biohazard bags, Hand Sanitisers |
| Green Zone | 1. Identify Private Hospitals with ICUs and attached staff to be trained and provided with consumables and PPE Kits to manage additional cases or sudden spike in cases  
2. Invite all small private clinics to attend for webinars on awareness, identification of COVID19 patients  
3. Ensure the availability of extra stock of consumables like gloves (surgical and examination), IV set, Ringers Lactate, Face shield, Protective googles, N95 Masks, Green gowns, Biohazard bags, Hand Sanitisers  
4. Procure 1000 rapid testing kits and 500 PPE kits per districts |
Contingency Plan and Exit Strategy

Section – II

Exit Strategy

Approach to a phase-wise Exit Strategy

Developing a phase-wise lockdown exit strategy with a clear roadmap to reach normal operations in daily life is essential to prevent a further spread of and instill confidence among people. Needless to say, depending on the severity and the burden of the spread of, different zones require different exit strategies so that no zone bears the burden of lockdown unnecessarily, and similarly zones that are severely affected, often known as the hot spots, do not move into relaxed socio-economic conditions with a risk of spreading the infection, in an exponential manner, further.

The other important parameters that define the risk factor are the density of active cases per lakh of population and spread. Spread can be a considered as a direct function of fresh cases reported on a given day.

The following Table shows the density of various districts.

<table>
<thead>
<tr>
<th>Sr. No</th>
<th>State</th>
<th>District Population</th>
<th>Confirmed cases (as on April 8)</th>
<th>Deaths</th>
<th>Fresh cases reported (as on April 9)</th>
<th>Density (Per Million)</th>
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<tr>
<td>1</td>
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</tr>
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<td>Dharwad</td>
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<tr>
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<td>0.0</td>
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<tr>
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<td></td>
<td>1.9</td>
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<td>12</td>
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Contingency Plan and Exit Strategy

<table>
<thead>
<tr>
<th>District</th>
<th>Population</th>
<th>Active Cases</th>
<th>Mortality</th>
<th>Density</th>
<th>Exit Strategy</th>
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<td>Mandya</td>
<td>1851525</td>
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<td>2.7</td>
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<td>Hassan</td>
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<td>Chamarajanagar</td>
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<tr>
<td>Kalburgi</td>
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<tr>
<td>Yadgir</td>
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<td>Kolar</td>
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<tr>
<td>Chikkaballapur</td>
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<tr>
<td>Bengaluru Rural</td>
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<td>Ramnagar</td>
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<td>0</td>
<td>0</td>
<td>0.0</td>
<td></td>
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</tbody>
</table>

Principles followed in Creating the Strategic Roadmap

**Step 1: Classification of various districts based on the risks:**

Based on exploratory & cluster analysis along with density and spread of the infection, various districts have been classified into Red Zone (Hot spots), Amber Zone (Medium Risk) and Green Zone (no cases).

**High Risk (Red) Zone:**

Zones with high active, mortality and density above 5 per million population

Districts of Bidar, Kalburgi, Uttara Kannada, Bangalore, Dakshina Kannada, Mysore and Chikkaballapur would fall under the high-risk zones. Belgaum and Bagalkot will also fall under this category since they are recording fresh cases indicating the spread of the infection.

**Medium risk (Amber) Zone:**

Zones of Low active/mortality with density less than 5 per million population and that are reporting low or no fresh active cases

Districts of Dharwad, Gadag, Davanagere, Udupi, Tumkur, Kodagu, Mandya and Bangalore Rural fall under the medium risk zone.

**Low risk (Green) Zones:**

The rest of the districts are classified as no cases zone with the understanding that they might fall into any of the above classification depending on the future emergence of active cases and mortality.

(Vijaypura, Haveri, Chamarajanagar, Chikkamagaluru, Chitradurga, Hassan, Kolar, Koppal, Raichur, Ramnagara, Shivamogga, Yadgir)
Step 2: Classification of activities into:

- **High Risks**
  - Health workers and hospitals -
  - Local Public Transport
  - Hypermarket dealing with daily groceries
  - Door-to-door essential service delivery personnel
  - Transport of essential goods by road
  - Emergency travel
  - Essential farming services
  - Autos, cabs

- **Essentials**
  - Small kirana stores dealing with daily groceries
  - Small Medical stores and pharmacies
  - Vegetable cart vendors

- **Non-essential**
  - Schools, colleges
  - Conferences, seminars
  - Celebratory social gatherings
  - Religious gatherings and places of worship
  - Sports gatherings and events
  - Non-local public transport
  - Malls, multiplexes, cinema theatres, etc.
  - Non-essential daily wage workers
  - Pubs, bars, fine-dining restaurants

- **Low Risk**
  - Delivery of luxury and non-essential goods like electronics, FMCG, etc.
  - Food delivery
Exit Plan

Before making recommendations for phase-wise lifting of lockdown, it is highly recommended that hot spots which are of very high risks due to localised clusters of positive cases within 500 metres from the epicentre should be identified across the Red and Amber Zones throughout the state.

Stricter lockdown measures should be implemented in these hot spots with immediate effect and up to April 30, 2020. No movement of people or vehicles should be allowed in this zone. Door to door delivery of all essential items should be organized under strict supervision of police using state vehicles which should be disinfected every time vehicle comes out of hot spots. Personnel who deliver the items must take full precautions with necessary PPEs to ensure the minimization of spreading the infection. Necessary medical care should be made available within the hot spots.

It is also recommended that the following steps be undertaken to further strengthen the state government’s contingency plan, in so far as the health workers and hospitals are concerned in the red zone districts, with immediate effect:

- Emergency wards, critical care departments made fully operational
- Adequate provisions for availability of ventilators and medicinal supplies
- Hospital ID should be considered as valid pass
- Provide PPE to health workers who are working daily and on priority to workers dealing with COVID patients directly
- OPD and non-emergent departments remain closed until further notice
- Reallocate hospital resources like doctors, nurses; ward boys, etc. for patient care in the event of a surge in COVID cases.

For Red to Yellow Zones

From May 1 onwards till May 30, after which a review need to be undertaken; the following essential activities are recommended to be made operational in a phased manner. Some new activities have been included considering their importance to the economy, livelihoods of the daily wage workers and ensuring sustainable production and supply of essential goods.

1. Local Public Transport
   a. Keep open Local public transport only for people with essential service pass and will be closed for general public
   b. Practice social distancing even in public transport
   c. Fumigate daily transport vehicles everyday
   d. Ensure all public transport workers a wear mask and follow necessary precautionary steps to ensure safety
   e. **Checks:** Passes, mask, provide sanitiser while entering, check temperature

2. Hypermarket dealing with daily groceries
   a. Instal fumigation tunnels as recommended
   b. At any point of time, only 3-5 customers to be allowed inside to procure essential groceries with only 1 representative per family
   c. Stock mostly essential grocery items
   d. Discourage selling of non-essential items
   e. Cost all items at regular MRP
   f. Provide customers with home-delivery option by appointing delivery boys within the convenient range of delivery and procure passes for these boys
   g. Ensure that every grocery worker wear mask and follow necessary precautionary steps to ensure safety
   h. Insist that all customers should wear a mask and follow necessary precautionary steps to ensure safety
   i. **Checks:** mask, provide sanitiser while entering, check temperature.

3. Door-to-door essential service delivery personnel
Contingency Plan and Exit Strategy

a. Procure passes for essential service delivery
b. Ensure that every worker has to wear a mask and follow necessary precautionary steps to ensure safety while delivering
c. Priority to be given for essential service and goods delivery only
d. Encourage online payment so that the goods can be dropped at the doorstep without coming in close proximity with any customer.

4. Transport of essential goods by road
   a. Allow inter-district and inter-state transportation of raw materials/finished essential goods
   b. Procure passes and essential documentation necessary for travel
   c. Skip driving through or halting at hotspots and high-risk areas
   d. Ensure that every worker wears a mask and follow necessary precautionary steps to ensure safety
   e. Ensure that limited workers to accompany the driver to transport the goods
   f. Fumigate the transport vehicle daily.

5. Emergency travel
   a. Procure approval and emergency pass for travel
   b. Individual must wear mask, carry sanitiser and temperature must be checked at every district exit and entry by officials.

6. Small kirana stores dealing with daily groceries
   a. In small stores, a queue system needs to be employed maintaining 6-feet distance between individual customers and only one customer at the counter at any point of time
   b. Suggested to rotate the employees to ensure that work is not halted and too many people are not gathered either
   c. Stock up mostly on essential grocery items
   d. All items to be charged at regular MRP
   e. Every grocery worker and customer to wear mask and follow necessary precautionary steps like sanitising hands before and after collecting packages to ensure safety
   f. Encourage online payment to avoid coming in close proximity with any customer.

7. Medical stores and pharmacies
   a. At medical stores and pharmacies as well, a queue system needs to be employed maintaining 6-feet distance between individual customers and only one customer at the counter at any point of time
   b. Suggested to rotate the employees to ensure that work is not halted and too many people are not gathered either
   c. Every employee and customer to wear mask and follow necessary precautionary steps like sanitising hands before and after collecting packages to ensure safety
   d. Encourage online payment to avoid coming in close proximity with any customer.

8. Vegetable cart vendors
   a. Vendor and customers to wear mask while purchasing
   b. Queue-like system to be employed here as well to ensure that there is no more than 1 customer at a time doing the purchasing
   c. The convenient range of delivery and procure passes for these boys
   d. Vendor to use sanitiser frequently
   e. If possible, plan for cashless transactions even with cart vendors.
Contingency Plan and Exit Strategy

Following low essential activities with high risks should continue to be under lock down till further notice

1. Schools, Colleges
   a. Schools and colleges to remain closed until further notice
   b. Continuation of classes can be moved to virtual learning mode
   c. For schools/students that cannot move to virtual mode, the syllabus for the upcoming academic year needs to be revised after consulting the Central or State boards.

2. Conferences, Seminars
   a. Physical conferences should be cancelled to avoid high-risk of spreading the virus. If required, the same can be moved to video conferencing
   b. The same applies to seminars and other similar professional/corporate gatherings.

3. Celebratory social gatherings
   a. Celebratory social gatherings like weddings, social parties, get-togethers need to be postponed indefinitely as these could lead to a potential community spread

4. Religious gatherings and places of worship
   a. Religious gatherings and places of worship need to be closed until further notice as these could lead to a potential community spread.

5. Sports gatherings and events
   a. Sporting events like premier leagues, tournaments, stadium matches, etc., need to be postponed indefinitely as these could lead to a potential community spread

6. Delivery of luxury and non-essential goods like electronics, FMCG, etc.
   a. Delivery of luxury and non-essential goods need to be temporarily shut
   b. Delivery personnel can be re-allocated to undertake delivery of essential goods only. Passes need to be procured for these delivery agents

7. Non-local public transport
   a. Non-local public transport to remain non-functional until further notice
   b. Develop a plan to use different modes of transport like rail and buses to deliver goods. The vehicles being used for this purpose need to be fumigated and sanitized after every trip

8. Malls, multiplexes, cinema theatres, etc.
   a. Malls, multiplexes and cinema theatres to remain shut until further notice

9. Non-essential daily wage workers
   a. Government needs to develop a plan to provide funds/essential goods to these workers to ensure that their livelihood remains unaffected
   b. Alternatively, they can be quickly re-trained to be assigned and used by the government to undertake essential service operations. For ex, a security guard working in a mall can be reassigned to secure curfew/cordoned off areas. Another example can be the use of cooks and maids in hospitals for providing food for patients and doctors and undertaking the cleaning and housekeeping work.

10. Pubs, bars, fine-dining restaurants
    a. Pubs, bars, fine-dine restaurants to remain shut until further notice
    b. the convenient range of delivery and procure passes for these boys
    c. Vendor to use sanitisers frequently
    d. If possible, plan for cashless transactions even with cart vendors.
Private and Corporate Establishments

NOTE: Various establishments can fall under different categories of risk-essential combination. Hence, no blanket suggestion can be made for this category. The respective governing body of each sector needs to come up with feasible solutions in collaboration with the founder/owner of organisations.

Some sample suggestions can be:

- Operating at 50% employee strength on a rotational-basis
- Employees that can setup WFH and whose physical presence at office is not required to keep the business running should be allowed for remote operation
- Salaries of top management can be reduced by certain percentage and the same can be redirected towards those employed as daily-wage workers or support staff
- Certain production companies that work on a raw material to processed goods model can re-allocate their raw material costs towards compensation for employees since there will be no raw-material procurement or end-user consumption in the near future

Based on the category each organisation falls under, the appropriate suggestions can be applied and made stricter or flexible as deemed fit.

For Green Zones

All activities that are operational in high and medium risk zones, following additional activities can be considered to be operational from April 15, 2020.

These are the recommendations that are being made for a city/town level. All those non-essential operations that are self-sufficient and do not need any import or export of goods and workers from outside of the city/town will resume operations normally. Examples here are schools, theatres, banks etc. Those establishments that rely on materials to be procured or sent out of their city/town will remain shut until the nation-wide situation gets better.

1. **Health workers and hospitals**
   a. Identify hospitals in the zone for treating any COVID related patients.
      - Emergency wards, critical care departments operational
      - Hospital ID should be considered as valid pass
      - Provide PPE to health workers who are working daily and on priority to workers dealing with COVID patients directly
      - OPD and non-emergent departments remain closed until further notice
      - Reallocate hospital resources like doctors, nurses, ward boys, etc. to caring for patients due to surge in COVID cases.
   b. Other hospitals not dealing with COVID patients can operate normally. One section of the hospital can be used as a “Quarantine Zone” in case patients with symptoms show up. Once tested positive, these patients need to be transferred to COVID treatment centres

2. **Local Public Transport**
   - Local public transport to remain open for general public
   - Social distancing should be practiced even within public transport
   - Daily fumigation of transport vehicle
   - Follow necessary precautionary steps like sanitizing and covering face while coughing/sneezing to ensure safety
   - Individuals showing symptoms of COVID-19 should ideally avoid using public transport and seek medical assistance as required

3. **Hypermarket dealing with daily groceries**
Contingency Plan and Exit Strategy

- Hypermarkets will be functioning normally
- Stock up mostly on essential grocery items at all times
- All items to be charged at regular MRP
- Every grocery worker to follow necessary precautionary steps to ensure safety
- Use infrared thermometers for restricting the people with fever entering
- Recommended to install fumigation tunnels
- Provide sanitiser to customers while entering the market
- Ensure all entrants to wear homemade masks
- Individuals showing symptoms of COVID-19 should ideally avoid going into public places and seek medical assistance as required

4. **Door-to-door essential service delivery personnel**
   - Every worker to follow necessary precautionary steps to ensure safety while delivering
   - Encourage online payment so that the goods can be dropped at the doorstep without coming in close proximity with any customer

5. **Transport of essential goods by road**
   - Inter-district and inter-state transportation of raw materials/finished essential goods allowed
   - Procure passes and essential documentation necessary for travel

6. **Essential farming services**
   - Essential farming services can be resumed normally
   - Social distancing to be maintained by farmers
   - Individuals must wash hands regularly and not take breaks in groups violating social distancing
   - Measures must be put in place for the transportation of farming equipment and produce

7. **Chain of restaurants delivering food**
   - Restaurants can function at 50% capacity
   - Provide sanitiser to customers while entering the restaurant
   - Individuals showing symptoms of COVID-19 should ideally avoid going into public restaurants and seek medical assistance as required

8. **Autos, cabs**
   - Autos, cabs can function normally with max of 2 passengers
   - Every driver and passenger to follow necessary precautionary steps to ensure safety
   - Encourage online payment to avoid coming in close proximity with any customer
   - Skip driving through or halting at hotspots and high-risk areas
   - Every worker to wear mask and follow necessary precautionary steps to ensure safety
   - Limited workers to accompany the driver to transport the goods
   - Fumigate the transport vehicle daily

For the following activities, normal operations can resume while following social distancing norms if the local administration feels the necessity of such activities are important after assessing the risks. Individuals must wash hands regularly and not gather in large groups which violates social distancing practices. However, schools and colleges are recommended to be closed till May 31, 2020.

1. Shops and establishments dealing with other than essential items but are important for the consumers.
2. Religious gatherings and places of worship with less than 50 people
3. Indoor games with limited participants
4. Delivery of luxury and non-essential goods like electronics, FMCG, etc.
Contingency Plan and Exit Strategy

5. Construction and mining activities provided materials are available within the zone
6. Inter district public transport to other green zones with 50% of capacity
7. Production activities at 50% capacity

Even with the above activities, if any individual has symptoms of COVID-19, they should avoid going to public places and seek medical assistance as required. If found positive, the zone to be categorised into medium zone and impose the restriction to the above activities.

Guidelines for Taking Care of Senior Citizens

Data analysis shows that most deaths occur in the senior citizens and to those with co-morbid conditions like Cancer, Diabetes, Heart ailments. Formulation of special guidelines to protect these citizens from contracting the infection along with providing the necessary treatment without any disruptions is imperative. Also, Governments should create an effective mechanism to collect data of such citizens and create a special team to take care of the essential requirements of these senior citizens who are living alone without any family support.

Some suggestions for the same are:

- Facilitate door to door delivery of essential services
- Provide easy mode of placing orders for these easily (via phone calls to a centralised number)

People who have prior experience or similar skillsets to care for the elderly need to be reassigned to those households where the seniors do not have any family support.

Migrant Management

The scope of the state responses must now expand to deal with the substantive migrant populations requiring mainstream attention. The responsibility must be delegated to the local bodies (ULB and GP). Among the systematic measures that the state must initiate include:

- A camp-specific epidemiological risk assessment to determine the risk of the transmission of the COVID-19 as a result of stranded migrants or the migrants’ collective sites, despite quarantining, needs to be considered.
- A specific COVID-19 outbreak readiness and response plans need to be developed for each collective site, in alignment with the state government’s response plans, and based on the prevailing risks, capacities and gaps that the state encounters.
- The District Collector needs to play the first among equals and ensure the team responds at its best. Should a team already be in place in the district, it needs to be re-oriented to COVID-19 response, especially to ensure a gendered response. This means including women in decision making for outbreak preparedness and response, and ensuring women’s representation in camp management and COVID19 community engagement spaces.
- Special arrangements need to be developed in relation to site-specific potential transmission amplification events, such as food distribution and logistics. Community engagement approaches will be important to facilitate the implementation of measures to reduce the risk of virus transmission.

Limitations

This report has been created based on the analysis carried out with the data available in the public domain. Since less than the actual no. of infected cases may have been detected and reported (limited testing has been adopted) and the data is available only at the district level, the predictions made may not be entirely accurate. With the availability of granular data at the taluk level or even
at the ward level could help better and more accurate analysis and hence facilitate to come up with strategies that are localised and focused so that the measures of lock down can be minimised on the citizens. This will however, require more data and analysis.

Conclusion

COVID 19 situation has rapidly evolved over the last 4 months since the first outbreak had occurred in Wuhan. A lot of information is available for the state to respond effectively from these learnings both at the national as well as the international levels. Neither data nor the medical reasons suggest blanket lockdown over an extended period. Hence, a blanket lock down across the state would hurt the public in general and the marginalised & daily wage earners, in particular. It also adversely impacts the MSME sector and reviving it would prove difficult.

However, lock down, complete or partial, gives time to the Government and health establishments to prepare well for better action planned interventions and optimization of resources for fighting the pandemic. It is therefore necessary to tread the line between lockdown and operations cautiously to ensure that there are no severe consequences of either decision on those at highest risk.
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