CDPP
CENTRE FOR DEVELOPMENT POLICY AND PRACTICE

COVID-19 AND INDIA
ASSESSING LOCKDOWNS AMIDST THE SECOND WAVE
- IMPACT ON EDUCATION

Authors

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In collaboration with

IMRC
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WORKING PAPER SERIES

ISSUE - 05 | MAY - 2021

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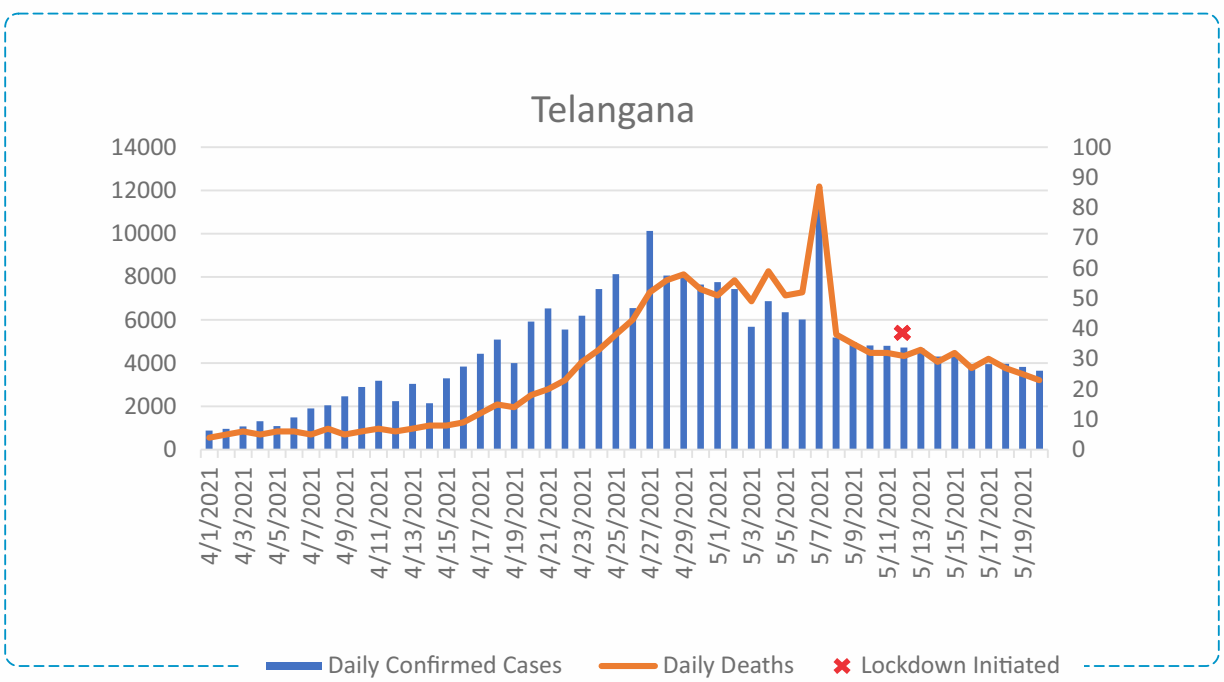
ABSTRACT

The national lockdown initiated in March 2020, with barely 600 cases in India, raised concerns over its political and economic costs. State Governments were, understandably, hesitant in imposing another lockdown in 2021 even amidst a surge. The draconian ***lockdown and the "junta curfew"*** *last year was declared a failed policy instrument in curbing the virus. The State machinery had to move towards ideas of limited movements, micro containment zones and relaxed restrictions before finally resorting to a lockdown. The virulence and unpredictability of the disease have forced Governments to innovate pandemic management processes and protocols.*

A lockdown that stalls movement and inhibits human interaction is only a band-aid approach to a larger systemic failure. The lives lost for the lack of Oxygen, hospital beds, essential medicines and money are a constant reminder of the gross neglect of healthcare infrastructure and the failure of governance during a crisis. Governments can no longer continue with piecemeal enhancements in limiting the pandemic and improving healthcare. It is important to understand that locking down cities not only imposes huge burdens on the revenue side, but also subdues consumption and distorts incomes, especially for the poor.

1. LOCKING DOWN AFTER THE PEAK

In Telangana, the number of cases had peaked at 4000 daily in June 2020. The decline then onwards was gradual till we recorded 2700 cases in August 31, 2020. The numbers after August started coming down rapidly, and on March 3, 2021, we only had 150 positive cases. However, this was only the calm before the storm. Almost immediately after, the numbers started going up. A 1000 on April 1, 7500 on May 1 and then only a slight decline over the last fifteen days of May, 2021. Was this decline only due to the lockdown in place? The question therefore is whether a lockdown in such a situation is justified? What should the state be doing to continue the slide in numbers and improve the overall situation?



Source: www.COVID-19india.org

The number of cases in Telangana began rising in the first week of April. The ascent became far steeper in mid-April. The number of cases peaked at 8000 in the last few days of April. **The lockdown in Telangana was declared much after cases had peaked (May 12). May onwards a consistent decline in the cases was already being observed, with May 26 recording 3800 cases and 23 deaths.** Deaths in Telangana started rising end of April, reached their maximum in early May with about 59 deaths. Deaths in the state started declining in the second week.

The draconian lockdown of March 2020 happened when there were 600 cases among 1.3 billion Indians. In contrast, the UK announced a lockdown when there 5903 cases in 66 million people, and Italy had a lockdown when it reached a toll of 9100 cases in a 60 million population. The lockdown and the subsequent exodus of migrant, poverty and the weakened economy in India have ensured that it can no longer serve as a policy tool in the current pandemic surge. The way forward is to vaccinate, open up the economy with restrictions in place and to do a cash transfer of basic incomes to all, especially to those who have lost their livelihoods.

2. THE SECOND WAVE

The fact that India was headed towards another COVID-19 surge became quite apparent by the second week of March 2021 as the number of cases rose steadily, as did the number of deaths per million by the end of March. Post-February, the COVID positivity rate was also witnessing a steady increase. Even with evidence from other countries regarding the devastating second waves and the eventuality of a lockdown, in this period, no attempts were made to curb public gatherings, to restrict internal movement or to provide any income support to ease the process of a lockdown in the event of one.

Large parts of the world have undergone a second wave despite adequate mechanisms in the place. There was always an inkling that India would also not be spared, and given the inadequacies in healthcare, the effects would be debilitating. The pandemic fatigue in the general population had become glaringly evident on several occasions, such as Holi festivities and the Kumbh Mela, with most masking and social distancing protocols being abandoned. Google mobility data indicated that public transit stations, grocery stores, outdoor spaces, recreation, workplaces and even retail showed an upward movement towards pre-pandemic levels post-September 2020, compared to the period preceding it.

Last December, 29 cases of the mutant strain were recorded in the country, and its possible impact was not unknown. The vaccine rollout had been sluggish, and vaccine hesitancy among the populace was by and large obvious. Hence, there were several indicators that the second wave was not too far from India. As festivities and political rallies started gaining momentum, the numbers of those who were getting infected insidiously started climbing till the dam doors burst open in April 2021.

Until January 2021, the total number of cases was 10 million with 1. 5 lakh deaths. India has had one of the lowest deaths per million population in the world. This probably brought in the sense of complacency of having gained control of the pandemic. Cut to the present, India now has had a total of 22.7 million cases as of May 9, 2021, with 50,000 deaths in a short span of 3 months and a total of 2.5 lakh deaths in the last 14 months due to COVID-19.

Between March-April 2020, the production of PPE was ramped extensively, and the country was producing 1.86 lakhs of PPE kits a day (as of April 30,2020). The production of masks was to the tune of

2.30 lakhs per day. The number of Oxygen-equipped beds went up from 62,458 in April 2020 to 2,47,972 in September 2020. In the same period, the number of ICU beds went up from 27,360 to 66,638, and the number of ventilators went up from 13,159 to 33,204. As the pandemic severity showed a dip post-September 2020, there was a corresponding reduction in the number of Oxygen beds, ICU beds and ventilators to 1.57 lakhs, 36,008 and 23,169 (as reported in January 2021), respectively.

This trajectory implies that the expansion in health services also witnessed a lull after infections flat-lined post-September 2020. States like Maharashtra and Karnataka saw a 50% decline in Oxygen beds. Maharashtra had a reduction in the number of ICU beds by 64%. Ventilators saw a considerable reduction in Karnataka, Maharashtra, and Delhi. These are also the states which are now the ones most impacted by the second surge. States slated to go for polls in 2020-21 began to clamp down on tests and withhold numbers on the tests. As 2021 unfolded, the election campaigns in states like Bengal and Assam with no safety protocols and social distancing carried the infection surge to unprecedented levels.

In pursuance of its stance of *Atmanirbhar Bharat*, the government was reluctant in approving foreign vaccine manufacturers such as Pfizer or Moderna. Moreover, as a goodwill measure, vaccine diplomacy saw India import domestic vaccines to 70 countries. In the eye of the storm now, India is pretty much left to fend for its own, with most foreign pharmaceutical companies having no capacity for fulfilling additional orders. India needs about 180 million doses per day. However, its current capacity is only 80 million doses a day.

Testing in India (daily testing per 1000 people) has consistently remained lower than in other countries. After the peak of infections in September, testing fell even lower, with India testing only 0.35 samples per 1000 people around Mid-February 2021. Tracing and tracking were also largely neglected. What states must do now is to wrest control and plan their own fightback strategically. Maharashtra has shown it can be done, especially in Mumbai, where cases have dropped rather remarkably. Telangana has been lucky and the relatively better infrastructure has helped. However, a number of avoidable deaths could have been prevented if Oxygen wasn't in short supply and if there were enough ICU beds in the various state run hospitals.

While a simultaneous rise in health infrastructure should have accompanied the lockdown, that, unfortunately, did not happen. Accountability and timely disbursal of the PM Cares fund could have gone a long way in providing resources to the states. The centralised directives created a policy paralysis, and the burden now lies on the states to remedy the deficits.

3. VACCINATING INDIA – THE RESPONSIBILITY SHIFTS TO THE STATES

The tragedy around COVID continues relentlessly. Daily numbers had crossed 4 lakh infections, with more than 4500 people dying every day. India now has one in 7 active cases worldwide, contributing to nearly 15% of the disease burden. Hospitals were stretched beyond capacity and are unable to handle this rush, particularly in Delhi and in UP. The good news is that these numbers are on the decline and are estimated to keep going down.

The silver lining comes from Mumbai, where the daily case load has been declining for a few days now. Orissa, Kashmir, Assam and Himachal did not see huge increases. However, in the rest of the country the news was grim.

What is scary is the prospect of our rural areas getting infected and that is what seems to be happening across the country now. There are no hospitals, leave alone ICUs and ventilators for rural patients and they are in a precarious situation without access to even testing facilities.

To compound these problems are the stories that are coming of departments and officials, who are deliberately asking diagnostic labs not to give reports that declare patients as positive. Also of death data being fudged and the mismatch between bodies that being buried and cremated versus the daily death figure being given out by governments. By now, unfortunately our data has lost so much credibility that there are various estimates that are being given out, which suggest that the actual figure of infections and deaths could be more than 3 to 10 times the official figures.

The first thing for state governments to do is to realise that data cannot be fudged forever. If death numbers are not given out, people will seethe over crowding in shamshaans and graveyards, and will know that there is something wrong. This spreads far more anxiety among people than the actual facts. States like Maharashtra, Tamil Nadu and Kerala have adopted the strategy of giving real time data on their portals and that is one reason their numbers are being respected. Also, the true extent of the problem enables both the public and private sector healthcare workers to be prepared for the load that they could get and should be prepared for any emergency.

The second is to ensure that there is more than an adequate stock of essentials like Oxygen. It is such a shame that India should now be running out of Oxygen and having patients being cleared out of hospitals as they run out of their supply. When the infamous incident happened in Gorakhpur in 2017 where young children died because of Oxygen supplies running out at a government hospital, the whole world was aghast and we thought this would never happen again. It is now the same scene across the country that we are witnessing while the international community watches in despair at horror stories emerging from Delhi, with its world class infrastructure, struggling to keep its hospitals open.

Thirdly, it is important for all state governments to launch the vaccination drive in a big way. It is again a colossal tragedy that India, which produces nearly fifty per cent of the world's vaccines of all kinds, does not have COVID vaccines in stock. It is also a matter of concern that less than 2 per cent of the country has been given the two doses that are required to build immunity. Less than 10 per cent have been given just one dose, leaving a large part of our population vulnerable to mortality and morbidity. The state must realise that people will be hesitant and would fear the after effects of taking a vaccine.

That is why it is important to carry out a major campaign and ensure that all respected people, celebrities, leaders and influencers are seen taking the vaccine. Campaigns showing the efficacy of vaccines must be taken up in a big way in all languages. There is enough irrefutable evidence now that those who take have been fully vaccinated, have an absolutely minimal chance of death because of COVID. It is also important to convey that those who are fully vaccinated can still carry the virus that could infect others, and therefore the need for masking and social distancing is even more critical now.

Fourthly, the bizarre decision to continue with public functions, political rallies and inaugurations must be stopped. The Madras High Court has come out with a clear message to the Election Commission (EC), going so far as to say the EC officials ought to be tried for murder. There was really no logic for allowing political parties to gather lakhs of people in crowded rallies. While in a democracy, there is no justification for postponing elections in usual circumstances, there was no logic of holding large physical rallies. With each party now using social media for campaigning, the same should be used for canvassing during elections too.

Finally, the big point that emerges is that, as a nation, we were caught napping. Even if there was to be no second wave, we cannot continue to have the broken health systems that we have across the country. Most health centres do not have staff, their pharmacies have no stock of medicine and the supply chain just does not work. We need to step up our spending on healthcare; at the moment, we spend less on our health than most poor African countries do. The dream of becoming a great superpower will only come true when we have an excellent education system and a fool proof health system that delivers high-quality care to all.

4. HOW THE REST OF THE WORLD FARED IN THE SECOND WAVE

It was the end of June, Europe's deaths due to COVID were dropping, reaching about less than 1000 per day; something that was observed during the early pre-lockdown stages of the Pandemic. Strict lockdowns were given the credit for this, although they surely devastated the economy. Thinking that this was "The End" of the Virus, and to stimulate the economy, the E.U started encouraging free movement across borders, in the hopes of reviving the almost dead tourist industry. Although the International borders were still closed and International visitors still barred from entering the E.U, the policy lead to the migration/travel of almost 4 million people across EuropeEurope (Holder et al, 2020). Not only that, but the travellers were not required to self quarantine, nor were they very keen on maintaining Social Distancing (it was Summer vacation for them afterall!).

Given this, signs of the second wave were appearing in many European nations by mid-August, despite low cases, although they began to grow at a rapid pace. When the chickens came home to roost, the second wave reached its climax, leading to more than 4000 deaths, something that the first wave, even at its zenith, did not manage to accomplish. Research shows that these decisions - swift internal reckless reopenings with nominal restrictions, coupled with cross-border travel - were at the root of the second wave(Minder, 2020).

The second wave was absolutely devastating. The first wave itself took a huge toll on the European Health Infrastructure, and when it still had not sufficiently recovered, the second wave hit. The U.K's health infrastructure resorted to overutilizing its medical capacity and rationing Oxygen.

Alison Pittard, dean of the Faculty of Intensive Care Medicine, told the British Medical Journal, "It is really bad. London, the East of England, and the South East of England are under immense pressure. Critical care units are overcapacity: there are some units that are at 140% capacity, so they have patients outside the critical care units. Departments have exhausted their mutual aid in terms of transferring locally because local units are full, so they are looking at transferring patients further afield to make sure they get the care that they need."

She added, "Emergency departments are jam packed because they can't get patients out onto a ward in the hospital, because the ward beds are all full. That has a knock-on effect on ambulances, which are then queuing up outside hospitals because there is no cubical for the patient to go to in the A&E. It has a huge knock-on effect" (Mahase, 2020). While Europe was desperately struggling with its second wave, the cases in India were falling steadily, and yet India was launching a pre-emptive Vaccine Campaign. An ambitious project, aiming to vaccinate around 300 million people from four priority groups - healthcare workers, public workers, people over 50, and those below 50 with comorbidities (BMJ, 2020). The Campaign was "pre-emptive" because India decided to use a locally produced vaccine, instead of an Internationally acclaimed one. Also, the Indian Subject Expert Committee (SEC) under the

Central Drugs Standard Control Organisation (CDSCO) ordered accelerated approval grants to the local vaccine producers, namely the Serum Institute of India and Bharat Biotech (BMJ, 2021).

Researchers were divided on this issue, with some praising the government on its proactive stance on vaccines, and others criticizing the government for not rigorously testing the vaccines before deploying them. The critics asked why such hasty measures are being taken, especially considering the fact that the cases in India are consistently falling.

While the debates on whether the Vaccine campaigns were "hasty" or not were going on in India, the second wave of the virus was making its way from Europe to South Asia. In early January, Japan declared its second COVID-19 emergency (The first one was in the first wave), having seven times as many COVID-19 cases as the last emergency. Hospitals were getting stacked, with Tokoyo Hospitals reporting an occupancy of 80% of its beds (Looi, 2021). Similarly, South Korea also declared an emergency as it reported its second-highest daily count. COVID-19 outbreaks were all over the place, especially in prisons, nursing homes and places of worship. Malaysia, Indonesia, Thailand and the Philippines, witnessing similar sudden increases in cases as well as in deaths, too some urgent steps (Looi, 2021). The second wave was getting closer than ever to India, but we were blissfully ignoring this impending danger.

5. THE SECOND WAVE HITS – HARD

The second wave hit India in mid-April. COVID-19 infections began to surge, reaching about 180,000 cases per day. Panic and severe lockdowns followed, with the State of Maharashtra imposing curfews and cancelling the school exams. Getting caught unprepared by the Second wave seems rather strange considering the fact that India seemed to have launched a Vaccine Campaign immediately after the Second Wave hit Europe. How come then, was India shaken up by the Second wave, something that it seemed to have anticipated? One possible answer to this riddle is that the Vaccination Campaign was a massive failure. The Vaccines were in an acute short supply. The British Medical Journal claims that only 17 million, out of the 300 million target, received the full two doses of the Vaccine (Thiagarajan, 2021).

Also, throughout this time, Elections were being held. At least five States spent the entire month of March holding public rallies for elections. In the State of West Bengal, where the Indian Prime Minister himself conducted several massive political rallies. All this was done despite the Indian Election Commission, the body responsible for the organization of all elections, repeatedly warning against conducting rallies (Bhuyan 2021).

Also, on first April, the government gave permission to hold the Hindu Festival of Kumbh Mela, a festival in which devotees from all over India gather and bathe in the river Ganges. Although it was called off 17 days later, the festival boosted the already growing spread of COVID cases, with local authorities reporting at least 2000 cases among the devotees (Bhuyan 2021). The Second wave brought the fairly robust British Healthcare Infrastructure to its knees. It was almost inevitable that the Indian Healthcare Infrastructure, something much poorer than that of the U.K, was going to collapse; the only question was of when? Well, the answer was, one week. Only a week later, the Indian Government claimed that it needed to import 50 000 tonnes of Medical Oxygen. It even sent Diplomats around the world asking vendors to make bids on supplying 100,000 Oxygen cylinders (Bhuyan 2021). Many countries began sending Medical Oxygen to India, The Kingdom of Saudi Arabia itself sent around 80 tonnes of Oxygen to India.

6. OUR COVID RESPONSE – A FARCE AND A TRAGEDY

What are we missing in the deluge of information and analysis on the infections and deaths due to Corona? One geography that is totally ignored is the erstwhile state of Jammu and Kashmir. With a population that is one third of Telangana's state sees almost the same number of new cases, above 3000 a day. And while Telangana was seeing about 30 deaths a day, Jammu and Kashmir has at least 60 deaths every day. There is no government there, and the way the state was suddenly made a Union Territory has caused tremendous damage. There is no political accountability, and the bureaucracy is unable to cope, without any political leadership. The sudden withdrawal of Article 370 is now coming back to haunt the region, with the entire balance that existed now disrupted.

The first and the second wave of COVID-19 all over India has been remarkably different from each other in terms of magnitude, severity and impact. In its first peak, India recorded 67.5 cases per million daily, around mid-September 2020. The second wave has logged in 283 cases per million daily (May 8, 2021). While the first wave had a death rate per million of 0.84, the second wave has pushed the number to 2.81. The sheer scale of cases and death is evident from the overburdened health services and crematoria. The rapid spread can be gauged from the fact that during the first wave, it took over two months for the cases to go from 25,000 to 92,000. However, in the second wave, the number of cases went from 22,000 to 3,87,000 in less than two months. The administrative machinery needed to expand services at breakneck speed, something it was not prepared for. The share of positive tests has also seen a surge from 12.7% in July last year to 22% this May.

The second wave has been catastrophic in numbers in India, just like in several other parts of the world. Europe reported 2.5 lakh cases and the US and Brazil roughly a lakh each day in their respective second waves. In India, while the numbers have been commensurate with the population size and density, the dearth's of basic healthcare have been far more devastating and heartbreaking than the infection itself.

The surge attributed to the mutant strain also altered how patients were being affected. ICMR data indicated that the number of patients who required Oxygen in the first wave was 41.5%, and this number increased to 54.5% in the second wave. Hospitalisations among those aged between 20-39 have gone up from 23.7% to 25.5% in the second wave. However, more than 70% of the population in both waves came from those above 40 years of age. Those patients requiring ventilator support also increased from 27.8% to 37.3%, with a large proportion of patients requiring ICU care, the health infrastructure operated with a major shortfall. Even though initiatives to increase beds, ICUs and ventilators were taken last year; the state did not anticipate the extent of the requirement.

The Central Government's policy in managing the first wave was highly centralised, began with a national lockdown and ended with the Centre-controlled vaccine drive. The National Disaster Management Act, with its centralised approach, clearly side-lined the role of the Civil Society, local communities and aid groups in preventing and combating the onslaught of the pandemic. The first wave targeted largely the rich and well-off, however, the second wave has penetrated rural hinterlands, so the top-heavy policy response can no longer be viable. The importance of Local Self-Governments in curbing spread at the grassroots level, while was largely ignored earlier, was a vital lynchpin in the second surge. The airborne transmissions require devolution of power to local levels to ensure tracing, testing, and tracking are seamless.

The first wave did not allow the States to tailor control strategies based on local constraints and imposed one-shoe fits all approach. The Central Government now expects the states to rise to a challenge of

colossal proportion. The Bhilwara Model in Rajasthan was probably the only decentralised model that was adopted in the first wave. In the second wave, Maharashtra was the first state to experience an increase in infection rates and to declare a lockdown. The decentralised approach in pandemic monitoring and management in Mumbai helped to drastically cut down the positivity rate in the city. The allocation of hospitals beds as per the severity and chances of recovery of the patient also helped in optimising the available beds. The 'Mumbai Model' allowed for targeted intervention by way of civic engagement.

Another important development in the current spate of the pandemic has been the role of courts. During the first wave, the Courts were silent on incidents such as the migrant exodus, police excesses during the lockdown and the overall failure of disaster management. However, the second wave has seen a proactive role played in facilitating government intervention. The Courts of Delhi, Madras, Karnataka, Allahabad, Gujrat, among others, have been extremely critical about the state of affairs. Some particularly noteworthy interventions have been those on supply of Oxygen and vaccine, transparency of data on beds, ordering lockdowns and the criticism of the Election Commission of India for permitting election rallies.

Last year, Social Media platforms drew criticism for spreading misinformation and islamophobia. However, during this second wave, social media engagement may have saved lives. Tweets, posts and messages amplifying requests for medicines, plasma, beds, funds and Oxygen flooded the social mediascape, thereby connecting donors and distressed patients.

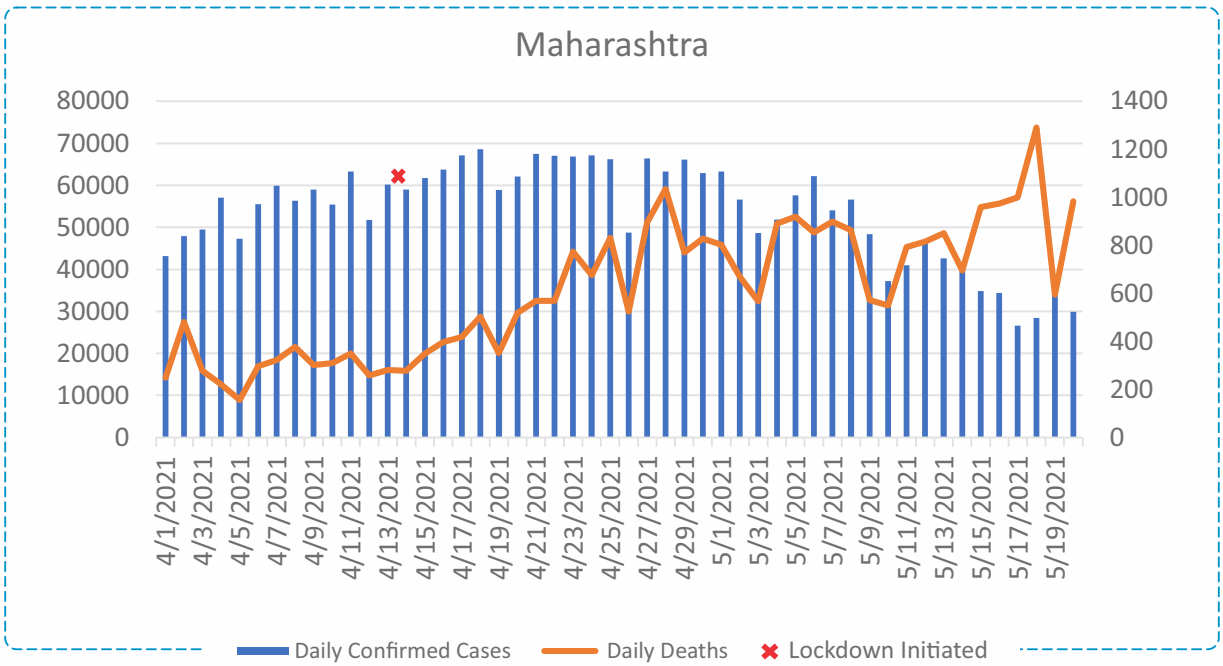
7. WHY LOCKDOWNS CAUSE MISERY

The national lockdown initiated in March 2020, with barely 600 cases in India, raised the political and economic cost of a lockdown; Hence, State Governments were hesitant in imposing one even amidst a surge. A lockdown this time around was declared a failed policy instrument in curbing the virus. The State machinery had to move towards ideas of limited curfews, micro containment zones and relaxed restrictions before finally resorting to a lockdown. The virulence and unpredictability of the disease have forced governments to innovate pandemic management processes and protocols.

A lockdown that stalls movement and inhibits human interaction is only a band-aid approach to a larger systemic failure. The lives lost for the lack of Oxygen, hospital beds, essential medicines and money are a constant reminder of the gross neglect of healthcare infrastructure and the failure of governance during a crisis. Governments can no longer continue with piecemeal enhancements in limiting the pandemic and improving healthcare. We see the data from various states over the last two months and see a regular pattern emerge.

7.1 MAHARASHTRA

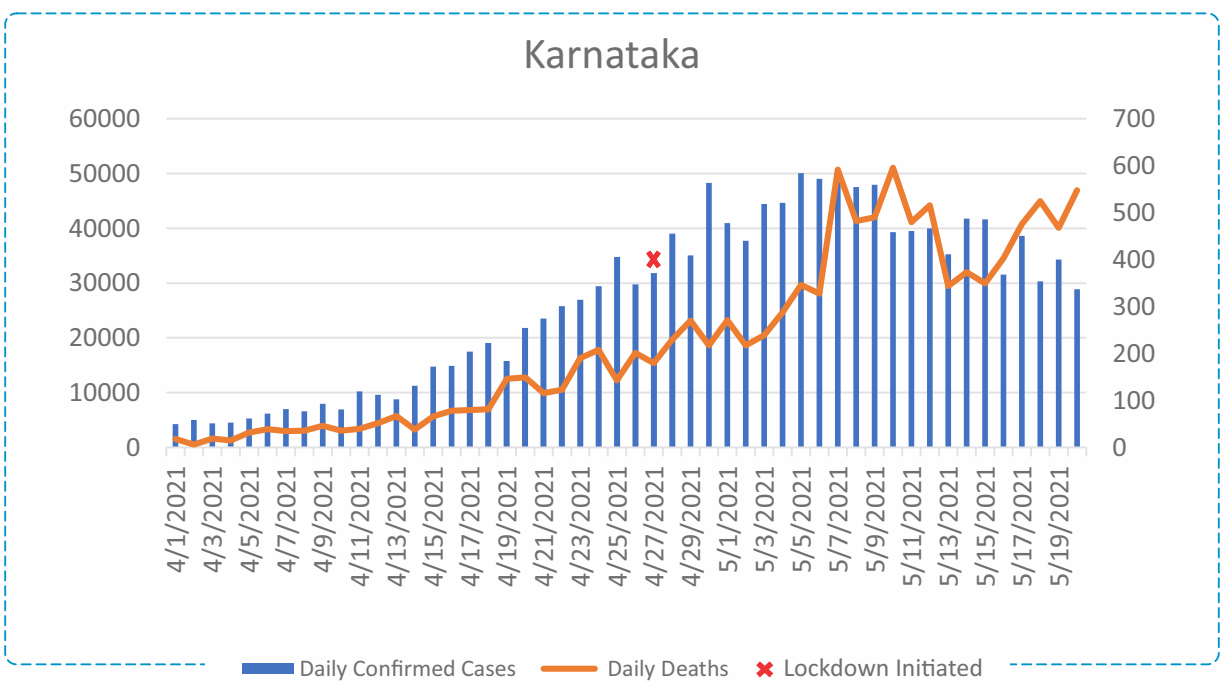
April 1 onwards Maharashtra was witnessing a steady increase in cases. It peaked around April 23-25, with around 66,000 cases being recorded each day in the period. April 26 onwards a slow but consistent decline is observed. Maharashtra declared a lockdown on April 14. A week later the daily cases peaked. Deaths in Maharashtra saw an upward ascent up until the first week of May , after which the number of deaths remained steady. However, after May 16 the number of deaths each day is on the rise again.



Source: www.COVID-19india.org

7.2 KARNATAKA

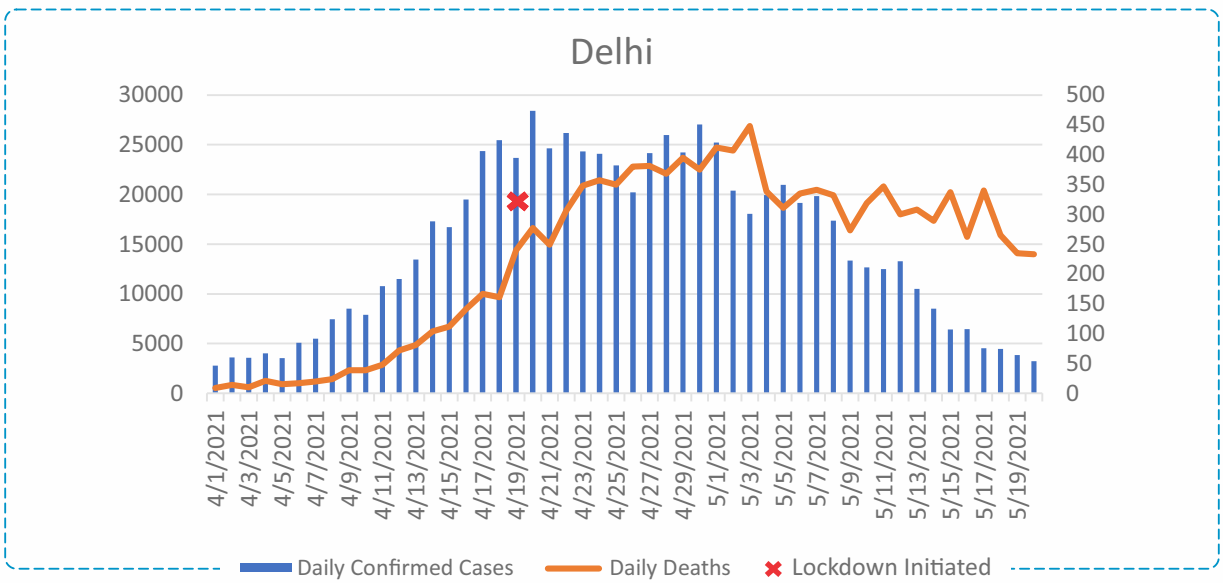
The cases in Karnataka began increasing mid-April. The number of cases peaked around May 9 with approximately 49,000 cases. The lockdown in Karnataka was declared around April 27, post which it took about two weeks for the case load to start declining gradually. The deaths in Karnataka also started rising gradually in the last week of April; however, post May 6, the curve for deaths became steeper and reached its highest between May 10 -13 with 500 deaths being recorded. After the peak, a consistent reduction in deaths was observed May 13 onwards.



Source: www.COVID-19india.org

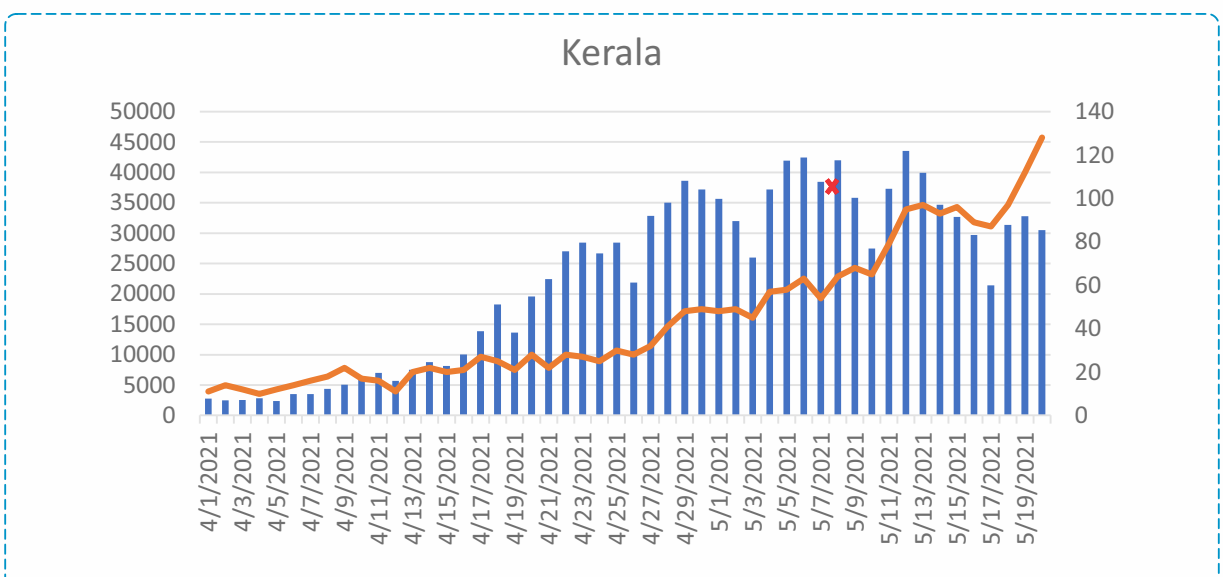
7.3 DELHI

The cases in Delhi began an upward ascent in the first week of April. Delhi Government first imposed a lockdown on April 19. The number of cases peaked a few days later April 23, with about 25,000 cases. The curve for new cases began to flat-line, with no significant changes. Beginning in May, the cases began to fall significantly. The cases fell to 4,000 mid-May from the 23,000 observed in the first week of May. The deaths in Delhi peaked in the first week of May (448 deaths). The decline in deaths in Delhi after May first week has been extremely slow when compared to the decline in cases. to pre-second surge levels in May.



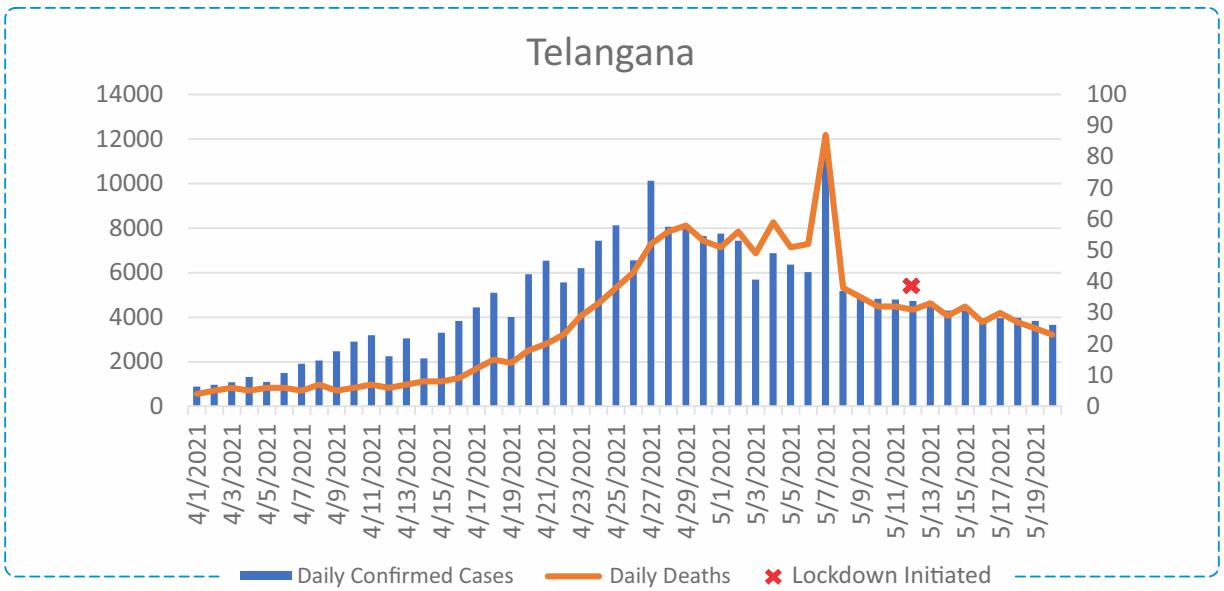
7.4 KERALA

The state started seeing an increased case load April onwards however the increase became much sharper end of April. Kerala imposed a lockdown on May 8, and the number of cases peaked at 43,000 around May 12. Post Mid-May , there has been a decline in the number of new cases recorded. The number of deaths in Kerala started to climb up only in the first week of May. The number of deaths in Kerala have not witnessed a sharp decline , with May 16 recording about 90 deaths.



7.5 TELANGANA

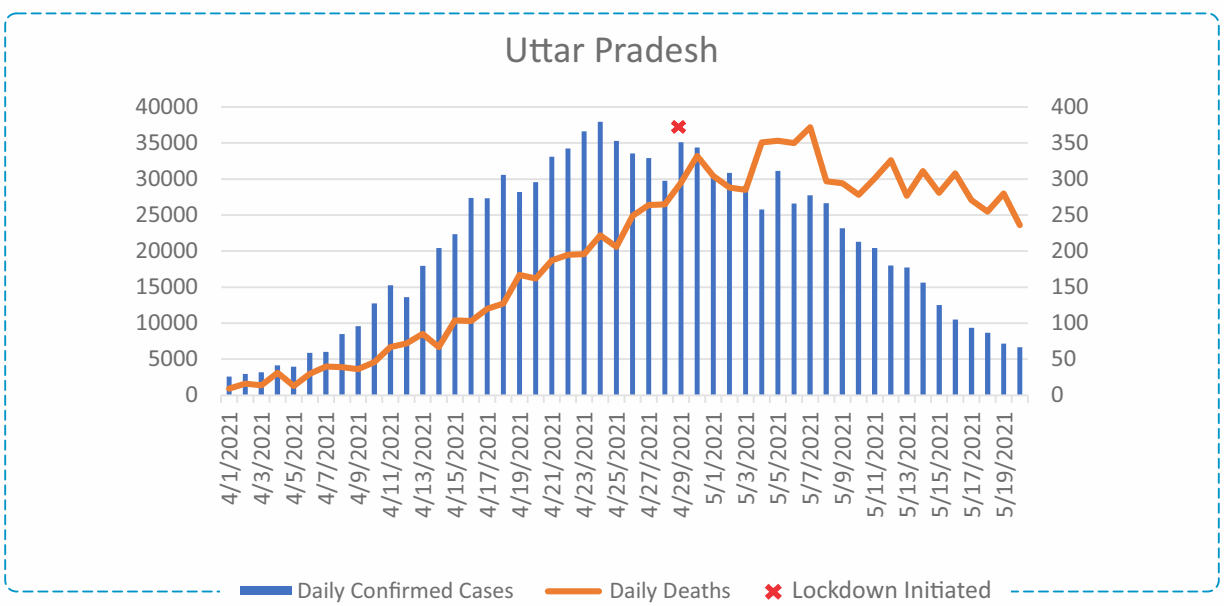
As we have already seen, the lockdown in Telangana was declared much after cases had peaked (May 12). May onwards a consistent decline in the cases was already being observed, and May 16 recorded 3800 cases.



Source: www.COVID-19india.org

7.6 UTTAR PRADESH

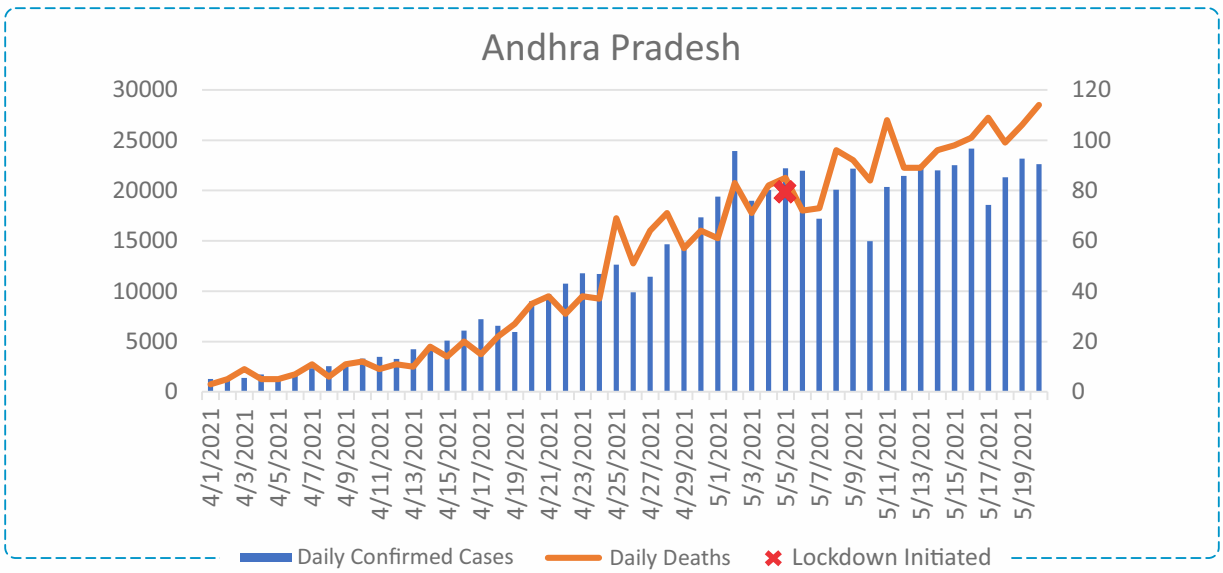
The cases in the state started rising in the first week of April and peaked end of April with roughly 35,000 cases each day. UP imposed a restricted lockdown in the last week of April and moved towards a full lockdown soon after. May onwards, UP witnessed a decline in the number of cases, and post the second week, a consistent fall was observed with May 16 reporting 9000 cases. The deaths in UP reached a maximum of 372 around May 7, however, they have remained the same post that with no decline.



Source: www.COVID-19india.org

7.7 ANDHRA PRADESH

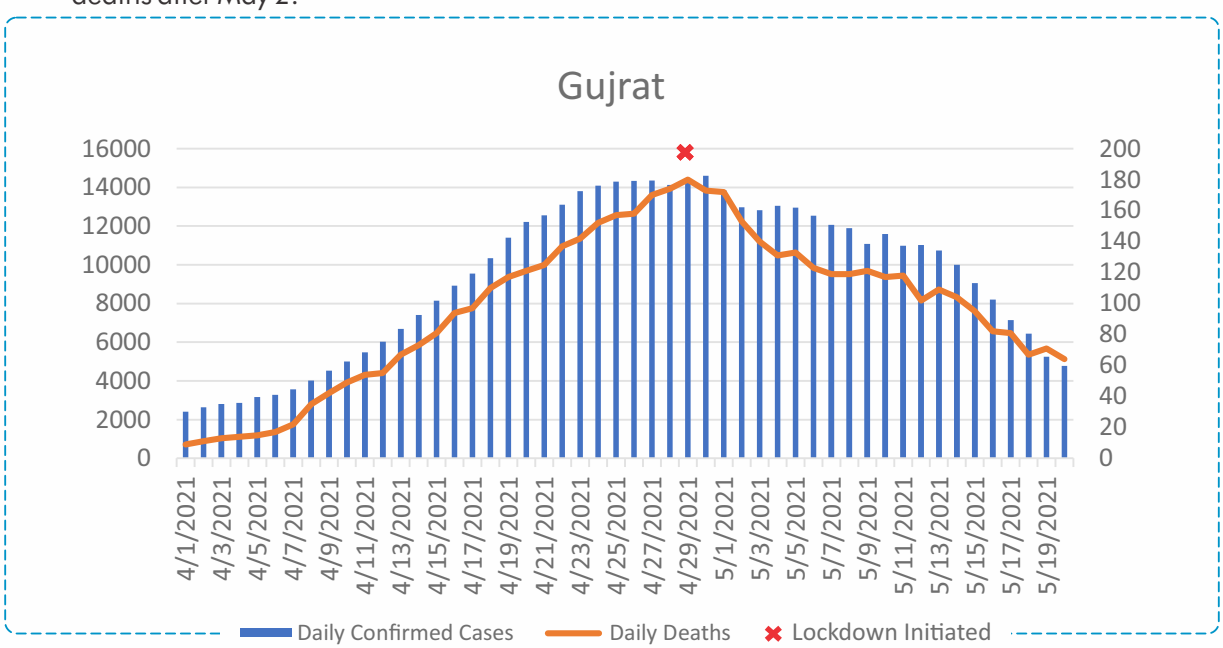
While the cases in AP started rising in the mid-April, the ascent became steeper in May. After May 6, the case load began to stagnate at around 20,000 cases each day. On the 5th of May, the Government imposed a partial lockdown, there has been no decline in cases even after 10 days of the lockdown. Deaths in AP continue to rise consistently, with May 11 witnessing 109.



Source: www.COVID-19india.org

7.8 GUJARAT

April 13 onwards, Gujarat has been witnessing an increase in cases rapidly. Between April 29 – May 1, Gujarat recorded its maximum of about 14,000 cases. The number of deaths in Gujarat peaked around the same time at approximately 180 deaths a day. Gujarat imposed partial COVID Lockdown around April 29. A steady decline is being observed both in the cases and deaths after May 2.



Source: www.COVID-19india.org

As we can see, only one out of eight states (Gujarat) saw declining death rates after imposing lockdowns, and that too was only a partial lockdown. The decline in the number of cases after lockdowns can be easily explained by the decreased testing done in lockdowns. It also must be emphasized that we are not alone in claiming that lockdowns are inefficient in controlling the virus. A study published by Stanford University's Department of Medicine in the European Journal of Clinical Investigation, after doing a cross country study on the effects of lockdowns, comes to the same conclusion as us (Bendavid et al, 2021).

The study compared the effects of more restrictive non-pharmaceutical interventions (mrNPIs) such as stay-at-home lockdowns versus the less restrictive non-pharmaceutical interventions (lrNPIs) such as masks and social distancing. The study was done with the data set of ten countries; England, France, Germany, Iran, Italy, Netherlands, Spain, South Korea, Sweden and the United States. Comparing the COVID-19 death rates of countries who used mrNPIs versus those who used lrNPIs, the study's conclusion is something worth quoting literally; it says, "While small benefits cannot be excluded, we do not find significant benefits on case growth of more restrictive NPIs. Similar reductions in case growth may be achievable with less-restrictive interventions."

These results strongly challenge the notion of the "Lockdowns will solve everything" attitude implicit in the behaviour of some of our States; moreover, the economic destruction brought forth by lockdowns must not be ignored.

8. ECONOMIC IMPACT OF LOCKDOWN

In addition to the devastation on Human life brought forth by COVID-19, the virus has brought even more devastation on human livelihood. The global picture becomes gloomier and gloomier, with evidence showing that even as early as March 2020, the Economy got hit by a 3.5% shrink, paving the way for a worldwide depression. India, as the 5th largest Economy of the world, was severely hit by the depression.

One of the reasons for this level of severity is that, even during pre-pandemic times, India was not doing too well. The Indian Economy has been losing growth momentum for three consecutive years, beginning in 2017-18. The gross domestic product or GDP growth was 8.3% in 2016-17. It fell to 7% in 2017-18, 6.1% in 2018-19. A consistently falling GDP coupled with a National lockdown spelt nothing short of a disaster for the Indian Economy. The Confederation of Indian Industry (CII) claimed India's (GDP) growth could fall below 5% in the fiscal year 2021 (Fy21). Arvind Subramanium, the former Chief Economic Advisor to the government of India, claimed that India may very well expect to have negative growth rates in the Fiscal Year 2021.

A shrinking GDP comes with its own horrible side-effects, one of these being a rapid decline in employment. According to the Centre of Monitoring the Indian Economy, "The employment rate fell from 37.6 per cent in March to 36.8 per cent in April". This means that a whopping 7.35 million people became unemployed during the initial lockdowns. The primary reason for this is the inhibition of mobility and economic activity due to the lockdowns. Declining employment is almost always followed by reduced consumption, which in turn reduces business incomes, causing businesses to often go bankrupt. Young startups were especially affected as they were unable to get necessary funding from investors.

Another side-effect of decreasing GDP is the fall in Exports. India's merchandise exports fell by a deep 60%, falling to $10.36 billion from $26.07 billion in April 2019. The Agricultural sector was also hurt, with findings suggesting that 60% of those farmers who harvested yielded a loss, and 56% of them claiming that the lockdown may impair their ability to sow crops for the next season. The incomes of State Governments have also taken a hit. Manish Sisodia, Delhi's Deputy Chief Minister, said that "In April last year [2019], the collection was ₹ 3,500 crore. This year, till April 30, we have collected only ₹ 400 crore. So, factoring in an anticipated growth of 10%, we are losing around 90% on GST and sales tax etc. On top of that, there are losses in excise etc. The government cannot disburse salaries with just 10% of the usual revenue".

States like Maharashtra cut public development spending by 67% for the 2020-21 period. Other states started increased borrowing to meet their financial constraints. The state of Madhya Pradesh borrowed a hefty sum of 3,000 crore Rupees in the two months of April and May.

The impact on health and nutrition was also severe. A WHO report investigating the impact of COVID-19 says "Millions of enterprises face an existential threat. Nearly half of the world's 3.3 billion global workforce are at risk of losing their livelihoods. Informal economy workers are particularly vulnerable because the majority lack social protection and access to quality health care and have lost access to productive assets. Without the means to earn an income during lockdowns, many are unable to feed themselves and their families. For most, no income means no food, or, at best, less food and less nutritious food." (Chriscaden, 2021). Another report claims that 115 million Indian children face the risk of malnutrition because of falling incomes due to the COVID-19 Pandemic (Kumar et al, 2020).

Although the current economic situation looks rather bleak, some experts believe a recovery will happen in three years time. A study conducted by Vikas Barbate, Rajesh N. Gade and Shirish S. Raibagkar estimates the long term (5 years) impact of COVID-19 on the Indian Economy (Barbate et al).

Depending on the recovery rate of the Economy, the study claims that "If the recovery is strong, in the year 2024–2025, the growth rate might reach up to 7.45%. If the recovery is moderate, in the year 2024–2025, the growth rate might reach up to 3.45%. If the recovery is weak, in the year 2024–2025, the growth rate might reach up to 1.45%".

The increased growth rate will be beneficial for the Economy, especially with regards to unemployment and industrial output. With regards to unemployment, the study claims, "If the recovery is strong, in the year 2024–2025, the unemployment rate might drop down to 12.13% from a peak of 20.13% in 2020–2021. If the recovery is moderate, the unemployment rate might drop down to 16.13% from a peak of 20.13% in 2020-2021. If the recovery is weak, in the year 2024-2025, the growth rate might reach up to 18.13%." As for industrial output, again, the study claims, "For a strong recovery, a positive average growth rate of 2% per year can be assumed. For a moderate, recovery a positive average growth rate of 1% per year can be assumed. For a weak recovery, a positive average growth rate of 0.50% per year can be assumed."

9. IMPACT OF COVID-19 ON EDUCATION

Education in the post-covid world has acquired newer dimensions as the sector acclimatises to the brave new world. Across 190 countries, 1.7 billion students were affected by the closure of educational establishments (World Bank Group , UNICEF and UNESCO, 2020). While the advanced nations had the means and the method to offer remote learning to their students, the low-income countries faced several challenges in offering the same.

According to UNESCO, high-income countries' digital education offerings covered 80% of the population, and in low-income countries, only 50% of the student population received digital education establishments. Erratic electricity supply and limited digital literacy coupled with the lack of devices were major impediments in access to digital education in most developing and under-developed countries (World Bank Group , UNICEF and UNESCO, 2020) . As the pandemic shows no signs of abatement, schools cannot re-open in the foreseeable future, at least without a comprehensive plan of action. Despite the Internet reaching only 45% of the Indian population (as of January 2021), online education seems to be the only viable solution.

The latest UDISE+ (Unified District Information System for Education) data released by the central government for 2019-20 shows only a marginal increase in school enrolments at the pre-primary level , primary and upper primary level. In general, across the country, enrolments seems to have stagnated at the 2018-19 levels (Department of School Education and Literacy, 2019-20) .

In 2019-20 , there were negligible dropouts at the primary and upper primary levels; however, dropouts at the secondary education level amounted to 17%. The transition rate from secondary to higher secondary rate in 2019-20 was at 72%, at primary levels, the transition rate was found to be above 90%. The retention rate in the same year for secondary school was 62%. The report reveals that even before the pandemic, secondary education was already grappling with issues of lower enrolments, higher dropouts , poor retention and transition levels (Department of School Education and Literacy, 2019-20).

Nearly 1.5 million schools were shut in India for 392 days, a significant part of 2020 and 2021, due to the pandemic impacting about 250 million children (UNESCO, n.d.). A vast majority of schools did not possess the means or the method to shift to digital education swiftly. As per the U-DISE report, only about 37% of schools in the country had a functional computer facility. 58% of private schools had a functional computer facility, only 28% of Government schools had the same. Only 22% of the schools in the country had internet connectivity; this was far lower for Government schools (11%) (Department of School Education and Literacy, 2019-20).

In India, the unstable internet connection and low broadband penetration in semi-urban and rural areas impacted digital learning opportunities. The adoption of digital technology was smoother among private schools in India, but government schools and the bulk of lower end schools were not able to take that digital leap seamlessly. In Brazil, for instance, 95% of the children from privileged families had computers at home, while only 14% of the students from low-income families had computers at home. In the USA, 100% of students from affluent families had computers at home, while only 25% from low-income families did (World Bank Group , UNICEF and UNESCO, 2020).

With the closure of schools, Mid-day meals in schools have also been disbanded. The lockdown has affected the nutritional security of approximately 115 million children. Given that every second child in India suffers from at least one form of malnutrition, the absence of both Anganwadi services and mid-day meals will have large scale ramifications for the country at large. The complete disappearance of Early Childhood Care and Education in the COVID years will have a massive impact on children's social, emotional, cognitive and physical needs and thereby impact learning outcomes for a vast majority in the future.

Due to the paucity of electronic devices and internet access in several underprivileged homes, their children are now out of school. The absence of school-like safe spaces, has made children vulnerable

to abuse and neglect. During the lockdown in March 2020 , ChildLine received 3 Lakh distress calls. This number has now gone up by 50% (World Vision India , 2020).

For a young developing country like India, the loss in learning shall translate into significant losses in human capital in the years to come. In October 2019, about 55% of children in India were unable to read and understand short, age-appropriate text by the age of 10. Learning assessments of students in India indicated that 54 per cent do not achieve the Minimum Proficiency Level at the end of primary school. Around 2 per cent of primary school-aged children in India were not a part of any school system (World Bank, 2019). The pandemic will only serve to exacerbate these deficits in education.

A study by Azim Premji Foundation highlighted that 82% of children across 5 Indian States have lost at least one specific mathematical ability, such as identifying numbers, performing operations or problem solving, compared to last year. Similarly, 92% of children, on average, have lost at least one specific language ability such as oral expression, reading fluency, writing skill and reading comprehension, compared to the previous year. This is seen uniformly across all classes (Azim Premji Foundation, 2021).

The enrolment by Muslims remained at 14% of the total enrolments, and enrolments for other minorities was at 17%. The enrolments for Muslim students in higher secondary education was at 10% of the total enrolments in 2019-20. The proportion of enrolments decline with an increase in class levels. About 33% of students belonging to Scheduled Castes, Scheduled Tribes and Other Backward Classes drop out of state government schools in Class 10 (Department of School Education and Literacy, 2019-20). The inequity during the pandemic would have also translated to disparities in learning. Students from disadvantaged groups struggled to gain access to remote learning and struggled with achieving the desired learning outcomes. In the USA, the white students were only 1 to 3 months behind in their learning schedule, while the students of colour were 3 to 5 months behind in their learning. A survey by ChildFund in 20 backward districts across 10 States in India revealed that 64% of students in rural areas felt that they would have to drop out of school if not given additional support (Down to Earth, 2021). While the specific data for deficits observed in learning outcomes for the marginalised groups in India is still not available, circumstantial evidence suggests that the digital divide and socio-economic backwardness may have severely impacted education for this group.

Before the second wave, only eight states/UTs opened classes from grades 1-12, while 11 have re-opened classes for grades 6-12, and 15 states have opened classes for grades 9-12. Three states have re-opened Anganwadi centers (Sharma, 2021), with younger children losing out considerably on crucial foundational learning. The devastation caused by the second wave has ensured that schools will tether on caution while even contemplating re-opening schools .

Re-opening schools will be an unprecedented challenge. Schools will be looking at children,who have lost years of valuable education and essential social skills. The task of easing young children into classrooms and normalising classroom learning will come with its own set of challenges. Apart from learning outcomes, an oft-ignored aspect in the Indian education ecosystem is mental health. With the highest rate of student suicide rates in the world, India can no longer ignore this aspect, especially with the closure of schools. The ChildFund Survey reported that most parents observed an increase in adverse behaviour in their wards, and more than 60 per cent of children themselves felt behavioural changes such as increased anger, irritability and lack of concentration (Down to Earth, 2021). Mental health will assume an important dimension once children return to school and deal with anxiety and separation. The emotional well-being of those cramped in small homes with no contact from their classmates and teachers needs to be particularly looked into.

10. THE WAY FORWARD - WITH FEWER LOCKDOWNS AND MORE VACCINES

Having made a bold decision that goes totally against the centralization streak that characterizes our federal government, it will be important for the centre to stick to this new system. Let the health subject indeed be given back to states. Either disband the MOHFW or rename it the Ministry for Ayushman Bharat, but do not allow it to take jurisdiction back. Exactly one year ago from now, the Union Ministry wouldn't even allow Kerala to ease the draconian lockdown even when the state had shown remarkable improvement in tackling the situation. At that time, the centre had underlined the Disaster management Act and reinforced its control over the pandemic. It has now given up that stance and that is indeed welcome.

The first step will be to get everyone vaccinated. In the short term, somehow or the other, each state has commited to go for universal vaccination for free. The problem, therefore will be with the capacity to deliver and the challenge in cajoling the sceptics to take the vaccine. UP particularly, with its burgeoning numbers, a broken health system and a ramshackle procurement policy, will have a huge problem. Its cities are already gasping for breath, in a grim reminder of the 2017 Gorakhpur tragedy where 60 children died due to Oxygen deprivation. How will the state of UP ramp up its cold chains, its health centres and its staff to vaccinate at least half its 200 million-strong population?

A good indicator of vaccine delivery in any state will be the success of its routine immunisation program. UP, Chattisgarh, Assam and Gujarat are among the laggards in this area, and the reason for their poor performance are a combination of poor health systems and exceptionally low vaccine offtake. Vaccines against COVID-19 will need to surmount the same problems including a new one where for the first time these states are going in for vaccinating adults. Mothers by now have learnt the value of the inoculation for their infant children and do go to health facilities where available.

Getting adults to take a vaccine will involve considerable investment in information and communication efforts and will have to be pushed through great political will and leadership. Here the problem with open market operations will play a big role. Even as vaccine hesitancy is coming down in various parts of the country with respect to COVID-19, any price tag on the injection will further dampen demand. In times like these, where more than a 100 million have become impoverished during the lockdown last year, there is an acute decline in consumption expenditure. Any further pressure on the wallet will drive most adults away from the COVID-19 vaccine. A focus on adults and COVID is in any case driving away children from health centres, and the WHO has raised a red flag on the impending doom with respect to children not inoculated against measles last year and this year.

The next step our health system must take is to work on a long-term approach. The haste with which the Union government had proclaimed victory over COVID has proven to be such an embarrassment with tragic consequences. This time around, we need to be ready for a third wave, which may never come. There is an urgent need to make some capital investments in the healthcare system. Encourage and sponsor state expenditure in building Oxygen capabilities, warehouses, cold chains and delivery mechanisms. In Health economics, the supply side issues need the health ministry's attention. Demand-side problems are best left to Public health departments, civil society organisations and community-based institutions.

What we then need is a long term approach to handling epidemics. The bird flu, or H5N1 is a deadly disease and has been lurking for at least 15 years. It kills nearly 60 per cent of those infected, and we have been saved till now because it has not come to India with the ferocity that COVID-19 has.

If it does enter, or if some other virus strain emerges, we can not run around again looking for spare Oxygen cylinders at industry outlets, or wait for vaccines. We need to have a develop a cohesive strategy that brings in the centre, states, the private sector, multilaterals and civil society.

Very importantly, we should not restrict our own options. By restricting our suppliers to two, we lost out on several vaccine manufacturers who could have delivered vaccines long ago and helped us improve our abysmal vaccination numbers. At the moment we have one manufacturer who must meet export commitments made and another whose entire capacity will go towards honouring the Central government's orders. A duopoly such as this in a demand surge will do what it can, and extract huge amounts of money from a hapless government that has no choice but to pay the ₹ 4,500 crores it has decided to now.

Finally, the government at all levels must get its communication strategy right. There are multiple messages going out. Most of our leadership is seen without masks, advocating home-based quack remedies and pushing fancy conspiracy theories leaving the common person confused and hesitant.

We need clear, honest and transparent data that will inform everyone truthfully and build credibility in the health information system. That is what it will take to fight this deadly second wave, the centre and states together.

As of now, we simply do not know which direction the Economy will be heading. However, we can be confident that a safe and all-encompassing Vaccination drive followed by easing of lockdown conditions may lead to a more substantial recovery rate for the Indian Economy. There is little that we will achieve by merely postponing the infections and flattening the curve while wrecking the edifice of the Economy, especially in Telangana where there is a robust healthcare system and a delivery mechanism that can get people tested and vaccinated at a brisk pace.

The way forward is a carefully drafted policy that allows the Economy to function, with restrictions in place for large gatherings. Schools and other educational institutions must be watchfully opened up, given the possibility of a third wave in October this year, especially directed at the youth. People must be encouraged to follow COVID appropriate behaviour that business establishments, factories and offices must enforce. Vaccine programs need to be launched across the state and all citizens must be made aware of the dire necessity to get inoculated.

REFERENCES

- (n.d.). Retrieved 5 19, 2021, from Covid19india: www.covid19india.org
- Azim Premji Foundation. (2021). Loss of Learning during the pandemic. Azim Premji Foundation.
- Barbate, Gade and Raibagkar, V., Rajesh and Shirish. (2021, February 1). COVID-19 and Its Impact on the Indian Economy. Retrieved from https://journals.sagepub.com/doi/full/10.1177/0972262921989126
- Bendavid, Oh, Bhattacharya and Ioannidis , E., Christopher, Jay and . (2021, January 5). Assessing mandatory stay-at-home and business closure effects on the spread of COVID-19. Retrieved from https://onlinelibrary.wiley.com/doi/10.1111/eci.13484
- Bhuyan, A. (2021, April 22). Covid-19: India Looks to Import Oxygen as Cases Surge, Overwhelming Hospitals. Retrieved from https://www.bmj.com/content/373/bmj.n1061
- Bhuyan, A. (2021, May 1). Experts Criticise India's Complacency over COVID-19. Retrieved from https://www.thelancet.com/journals/lancet/article/PIIS0140-6736(21)00993-4/fulltext
- Ibid
- British Medical Journal. (2020, December 7). Covid-19: Indian Health Officials Defend Approval of Vaccine. Retrieved from https://www.bmj.com/content/372/bmj.n52
- British Medical Journal. (2021, January 7). Covid-19: Indian Health Officials Defend Approval of Vaccine. Retrieved from https://www.bmj.com/content/372/bmj.n52
- Chriscaden, K. (2020, October 13). Impact of COVID-19 on People's Livelihoods, Their Health and Our Food Systems. Retrieved from https://www.who.int/news/item/13-10-2020-impact-of-covid-19-on-people's-livelihoods-their-health-and-our-food-systems
- Department of School Education and Literacy. (2019-20). UDISE+ Report . New Delhi: Ministry of Education,Government of India.
- Down to Earth. (2021, March 19). More kids, parents want schools opened; say difficult to cope without support: Survey. Retrieved from Down to Earth: https://www.downtoearth.org.in/news/young/more-kids-parents-want-schools-opened-say-difficult-to-cope-without-support-survey-76053
- Holder, Stevis-Gridneff, and McCann, J. M. and A. (2020, December 4). Europe's Deadly Second Wave: How Did It Happen Again?. Retrieved from https://www.nytimes.com/interactive/2020/12/04/world/europe/europe-covid-deaths.html
- Looi, M.-K. (2021, January 15). Covid-19: Japan Declares Second State of Emergency as Asia Struggles with Virus Surge. Retrieved from https://www.bmj.com/content/372/bmj.n141
- Ibid
- Mahase, E. (2020, December 31). Covid-19: Hospitals in Crisis as Ambulances Queue and Staff Are Asked to Cancel Leave
- Minder, R. (2020, July 23). Spain's Reopening Stumbles as Virus Cases Rise Among Young People. Retrieved from https://www.nytimes.com/2020/07/23/world/europe/spain-coronavirus-reopening.html

- Sharma, N. C. (2021, March 5). Mental health of one in seven children at risk due to covid-led lockdown: UNICEF. Retrieved from Mint: https://www.livemint.com/science/health/mental-health-of-one-in-seven-children-at-risk-due-to-covid-led-lockdown-unicef-11614925206066.html
- Thiagarajan, K. (2021, April 30). Why Is India Having a Covid-19 Surge?. Retrieved from https://www.bmj.com/content/373/bmj.n1124
- UNESCO. (n.d.). Education: From disruption to recovery. Retrieved from UNESCO: https://en.unesco.org/covid19/educationresponse
- World Bank Group , UNICEF and UNESCO. (2020). What Have We Learnt? World Bank Group , UNICEF and UNESCO.
- World Bank. (2019). Learning Poverty Brief. World Bank.
- World Vision India . (2020). India Child-Wellbeing Report. New Delhi: World Vision India .

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