Challenges in Times of Covid-19 Pandemic

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ABSTRACT

Pandemic in simple terms is an infectious disease spreading into various regions and continents affecting large populations. World witnessed several pandemics earlier like Spanish flu which led to heavy human loss and suffering hundred years back. In recent years viruses like SARS, Ebola, Nipah, etc., have affected humans. The latest of this is Covid-19 virus belonging to SARS group.

In this article an attempt has been made to discuss urbanisation and ecological linkages, urban bias of Covid virus spread and the impacts of virus infections. The issues arising out of Covid virus and the strategies adopted to deal with emerging problems in India are discussed along with some light on international experiences. Covid virus is a developing story hence, the discussions are based on present situations and experiences.

Keywords: *Urbanisation and ecological linkages, urban bias, impact of virus*

URBANISING WORLD

Urbanisation is the global trend witnessed more vigorously in the post-industrial era across the developed countries. The countries in the developed region became more urbanised with urbanisation levels reaching 70-80 per cent. The urban centres were developed with great foresight and good infrastructure facilities. Urbanisation in the developing world picked up rapidly in the past 50-60 years outpacing the developed regions. Urbanisation is a complex socio-economic process that transforms the built environment, converting formerly rural into urban settlements, while shifting the spatial distribution of population from rural to urban areas.[1] It changes balances in ecological, demographic and social structure across the globe. The wellbeing of

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humanity ultimately depends on whether the governments in developed and developing regions unitedly deal the emerging problems or keep playing blame games fighting one another.

The pace of global urban population growth is phenomenal. For instance, it took 10,000 years of human history for the world's urban population to reach one billion in 1959. It took 26 years for two billion in 1985, 17 years to reach three billion in 2002 and mere 13 years to reach four billion in 2015 and estimations indicate that it will reach five billion by 2028 and six billion by 2041 taking 13 years for each billion. Further, urban population increased from 29.6 per cent in 1950 to 55.3 per cent by 2018 and it is expected to increase to 60 per cent by 2030 and 68 per cent by 2050. Further, it is reported that more developed world has only 23.6 per cent of world urban population as against 76.4 per cent in less developed countries in 2018 which the developing world is estimated have 79.7 by 2030.[2]

If the above trends reveal the pace of urban growth, the more severe problem is the intensity of urban growth. Rapid urban sprawl is leading to growth of mega cities engulfing the peripheral semi-urban settlements. Of world urban population, 42.1 per cent is living in 548 million plus cities. Further, 12.5 per cent is living in 33 mega cities of 10 million population distributed across 20 countries.[3] This speaks of the level of urban concentration. At the city level, similar problem relates to population densities. It was estimated that average density was 2,450 persons per square kilometer in the 50 KM vicinity of the seven largest metropolitan areas with population above four million as back as 2001 (World Bank).

Indian Urban Scenario

In the entire world, China and India are experiencing population pressure due to general population growth. In the urbanisation front also both the countries are witnessing rapid urban growth. The urbanisation growth trend in India indicates that the urban population which was 78 million in 1961 increased to 377.1 million by 2011, near about five-fold increase in five decades. The critical factor is net decadal addition of urban population which rose from 30 million in 1971 to 91 million by 2011. This urban growth is mainly due to migration of people from rural areas in search of employment. Migrant labour is therefore, a critical factor in urban development in India. Unfortunately, this aspect has been ignored by the policy-makers in devising the development programmes until the recent outbreak of the Covid virus which put tremendous pressure on the migrant labour in India due to job losses.

Another trend witnessed in recent decades is the gravitation of rural migrants into the middle order and large cities. For instance, 70 per cent of people live in one lakh plus cities in India. Rapid growth of million-plus cities is another trend in large cities. Large cities are experiencing rapid urban growth spilling over into the surrounding towns and other settlements. More significantly, milion-plus cities increased from just seven in 1961 contributing about 23 per cent to total urban population to 53 by 2011 contributing to 42.6 per cent to urban population in about five decades..

The core cities continue to experience population pressure and concentrated development. This trend has an impact on population densities in core cities. A third of India's new towns came up in a 50 km neighbourhood of existing million-plus cities. Added to the population pressure, rapid growth slums is another important trend in India. As is widely known, Indian slums lack even basic civic amenities like water, sanitation, and health. The densities are higher due to congested growth and small tenements housing more people. Further, older parts of cities continue to have more population and congested living. All these factors lead to higher population densities in core cities.

INDUSTRIALISATION, URBANISATION AND ECOLOGY LINKAGE

Industrialisation which began during the 19th Century continued through 20th Century with more vigour. One of the outcomes of industrialisation is urbanisation. Urbanisation involves shift of people from rural to urban areas adopting non-agricultural occupations. As people tend to move towards urban settlements, spatial patterns of human habitats change. At global level, it disturbs the eco balances leading to a plethora of problems like melting of glacier ice, rise of sea levels, deforestation, invasion of wildlife into human settlements, etc. The effects of rapid urbanisation are widely discussed, and the scientists and responsible elite groups continue to warn countries on the coming calamities like ozone erosion, flooding of cities due to increasing sea levels and changing weather patterns, and increasing pollution – all affecting human well-being adversely. Of these, environmental pollution aspect has been widely discussed across the globe as well as in India. Despite certain efforts, pollution continues to be a critical issue for urban health in India.

Deforestation-wildlife habitat disturbance-virus outbreak linkage

Deforestation is taking place due to increased human activities like agriculture and industries. Apart from its ecological impacts, it has disturbed the forest wildlife. As things turned up, disturbing the wildlife

habitats, in fact, became a threat to the human health. The governments unfortunately prefer to continue the disturbing activities in the name of development. Always busy with politics and normal administrative issues, governments rarely give importance to the emerging ecological issues and problems.

Studies often bring out that various viruses which live on wild animals are slowly entering into human settlement domain affecting their health adversely. For instance, in 1998, a novel paramyxo virus named Nipah virus, broke out in Malaysia. Scientists have found link between the deforestation and outbreak of Nipah virus. The disease was transmitted from pigs to humans. It is observed that pteropid fruit bats were identified as a natural reservoir host[4]. This virus naturally lives in forests hosting on bats. It has been seen that the forest habitat of these bats in Southeast Asia has been substantially reduced by deforestation for pulpwood and industrial plantation. Later, in September 1998, an outbreak of fatal febrile encephalitis occurred in inhabitants of Ampang village, Kinta district in the northern peninsular Malaysia.' Investigations found that the outbreak was preceded by the occurrence of respiratory illness and encephalitis in pigs in the same district and later in 1999, similar diseases in pigs and humans were recognised in the central and southern part of peninsular Malaysia due to movement of pigs outward. Slowly it travelled to Singapore. Eleven respiratory and encephalitis illness including a death were reported among abattoir workers in Singapore who handled pigs from the outbreak regions in Malaysia. The outbreak in Singapore ended when the importation of pigs from Malaysia was prohibited and the outbreak in Malaysia ceased with the culling of over a million pigs. A total of 265 cases of encephalitis including 105 deaths associated with the outbreak were recorded by May 1999 in Malaysia.[5] The virus outbreak was interlinked to several chain activities starting from disturbing the bat habitat to pigs and pig industry, food, migration, etc.

Scientists argue that many viruses exist harmlessly with their host animals in forests, because the animals have co-evolved with them. But humans can become unwitting hosts for pathogens when they venture into or change forest habitat.[6] Further, it is stated that malaria which kills over a million annually due to infection by Plasmodium parasites transmitted by mosquitoes, has long been suspected of going hand-in-hand with deforestation. In a study based on satellite and health data by MacDonald and Stanford University's Erin Mordecai[7] reported a significant impact of deforestation across the Amazon basin on malaria transmission. It is further estimated that between 2003 and 2015, on an average ten per cent yearly increase in forest loss led to a three per cent

rise in malaria cases. It is also brought out that some viruses like Ebola or Nipa, can be transmitted directly between people allowing them to travel around the world as far as there are humans. Zika virus, which was discovered in Ugandan forests in the 20th century, could only cruise the world and infect millions because it found a host in *Aedes aegpti*, a mosquito that thrives in urban areas.[7]

IMPACTS OF COVID-19 VIRUS

Unlike the other viruses, Covid virus has turned out to be a pandemic and global problem covering majority of the countries across the world. Every country is facing problems in dealing with the outbreak of the virus Covid. Surprisingly, even the developed countries are struggling to deal with the problems. The situation in India with poor healthcare facilities is more severe. Covid virus belonging to SARS group originated in Wuhan city, China like many other SARS viruses. There are mysteries to be uncovered about the actual origin of the virus. If China defends that it originated in the wet meat markets which are extensive in the country, the countries like USA are suspecting that it might have leaked from research labs in Wuhan city. Covid virus is dangerous as it spreads through human contacts. The virus can travel to other countries through human carriers. Recent studies also show that it can survive in air for hours together leading to easy spread in communities. The symptoms and effects of virus on human health are still being investigated. Everyday new findings are revealed creating a kind of panic among common people.

At the global level, countries are blaming China for its failure to control the spread into the other countries. Free international travel from Wuhan in the initial days of November and December, contributed for its transport to other countries from where it originated. While the political blame game continues, economic repercussions are leading to severe unemployment and loss of jobs due to lockdowns affecting the livelihoods of people.

Urban Impact of Covid Virus

The population of developed countries is mostly urban. The prominence of Covid cases in cities like New York, Chicago, Los Angeles, and London indicate the urban bias in developed countries. If the international travel across the cities contributed for migration of virus into other countries, the higher densities of populations in cities have contributed for the spread of virus among communities. In the initial stages, international travellers were not screened and quarantined properly for virus. In the communities, the dense populations and lack of restrictions led to wider impact. All this led to virus spread.

Wherever human densities are high, scope for rapid spread increases as humans are the prime carriers. The spatial nature of Covid virus spread reveals that countries and regions/cities with large populations and densities have become super spreaders of Covid. Cities have turned out to be epicentres of the virus due to slums and dense populations.

Urbanisation in India has been fast in recent decades. Urban density is evident from the fact the rural areas which roughly occupy 90 per cent of the area has about 70 per cent of the population. States like Maharashtra and Tamil Nadu are more urbanised in India. Expectedly, Maharashtra state contributes to 24 per cent of the country Covid cases and Tamil Nadu 14 per cent. The rapid population growth in the country led to unprecedented migration to large cities like Delhi, Mumbai, Bangalore, Hyderabad, and Chennai turning them to mega cities. The mega cities lead in high population densities and growth of slums. The Covid statistics are not maintained to differentiate between the urban and rural areas. But the broad trends indicate the urban bias. The dominance of mega cities including their vast urbanising hinterlands, and the secondary cities in the districts in the Covid virus spread undoubtedly prove the urban bias.

Urban densities create complex problems in dealing with the Covid virus. In core cities, densities are high and family sizes are also high. People live in congested areas with very less lung space. In the developing areas especially in mega cities, the colonies lack basic infrastructure and civic facilities including health and sanitation. Slums have become common in core and developing areas in cities. At the other end, older parts of cities are overburdened with more population and deteriorating infrastructure requiring redevelopment. Managing the slum areas and old cities, therefore, became a herculean task for the civic authorities even in the normal times. It is unfortunate that despite spending huge money for slum development, slum life has not changed much in India. If increasing pollution has been affecting health of the urban dwellers, the increased urban growth put tremendous pressure on local authorities to maintain basic services. Sanitation and public health are the most affected areas in cities and towns. The ULBs are put to most stress in these aspects in Covid times. Though capacity building efforts have been increased in recent times in India, the urban situation remains critical.

Impact of Covid-19 on Public Health Systems

Though world experienced virus outbreaks earlier in the form of SARS, Ebola, etc., the Covid-19 virus turned out to be more dangerous

in terms of rapid spread and ability of the virus to sustain in varied environments and adapting fast. In fact, the Covid virus has taken world into its grip threatening lives of people and making governments struggle to control and deal with the problems. The worst affected are the health systems which are fragile in the developing countries.

As per the Indian Constitution, mainly states are responsible for public health. But, with 73rd and 74th Constitutional Amendments, public health has also become the function of the local governments—municipalities and panchayats through the 12th and 11th Schedules. Cities, therefore need redevelopment as well as extension of basic civic services in developing areas. This has become a herculean task for urban authorities. The primary health centres lack basic facilities and medicines to treat the patients.

If ULBs provide basic sanitation and primary health care systems in urban and rural areas, the state governments can develop specialised and general health hospitals on a bigger scale, especially in the major cities. In line with privatisation, health facilities are also privatised in India leading to mushrooming of private hospitals in cities and towns. Whenever seasonal diseases like flue, cholera, etc., increase, public and private hospitals find it difficult to cope with the demand.

The weak government monitoring by state agencies has become bane of poor performance of public health system. Lack of facilities and even medicines have become common problems in government hospitals. Unfortunately, public health systems are largely under-funded and understaffed. On the other hand, administrative corruption thrives, taking advantage of the monitoring lapses. Health scams have become order of the day in India. In the circumstances, the outbreak of dangerous virus like Covid is a great challenge to the governments.

Covid-19 is not a normal health problem. It is a pandemic affecting the entire population. It goes beyond the local and even state governments. It is a disaster and in Indian federalism, disaster management does not find place in any listed functions between the Centre and the states. The Union has the powers to legislate on the unlisted subjects under Entry 91 of the Union List.[8] Further, the Entry 29 of Concurrent List makes Centre and states responsible for preventing spread of infectious diseases across the states and regions in the country. Added to this, the Union Government has also powers to give directions to the states in case of internal disturbances and external threat. Covid is considered as an internal threat arising out of health emergency in the country. Due to amendments to Article 352, emergency cannot be declared by the Centre. Under these circumstances, the Government

of India utilised the old pre-independence period Act called, Epidemic Diseases Act, 1897 and the National Disaster Management Act, 2005 enacted under Concurrent List. The National Disaster Management Act empowers the Centre to give directions to the states under security subject. The Covid virus pandemic was thus dealt under different provisions by the Government of India. The management of disaster is normally the responsibility of the states. Thus, the legal provisions indirectly helped the Central, state, and local governments to cooperate in dealing with the issues of Covid in India.

Impact of Covid Virus on Economies

The rapid spread of virus across the countries covering the entire globe, not only affected the health authorities concerned, but also on the economies of countries. The emergency health conditions led to imposition of lockdowns strictly curbing movements of people across regions and within the towns and cities. This has forced industries and business establishments including retail sellers to shut. In the process, if several people lost employment, the companies lost productive period incurring heavy losses. The worst affected are people working in informal sector and migrant labourers. The governments across the countries came forward to support unemployed and poor people to survive in difficult times. But even the governments cannot support the people as their own coffers get reduced due to halt of economic activities.

The economists warned that longer close -down of production and business activities will lead to severe recessions and hunger. But life is more precious and important. The governments preferred life to livelihood in the initial period. But the realisation has come slowly, and governments started easing lockdowns opening the economy. In the meantime, the repercussions of the lockdowns started showing in multiple ways. If unemployment led to psychological problems and family disturbances, reduced incomes compelled people to curtail their spending restricting to the necessities. Less spending led to less business even after opening of the businesses. Even governments reduced their spending due to decreased incomes. Reduced GDPs and increasing government budgetary deficits are other important challenges facing the governments.

As people are still in the grip of Covid virus spread, recovery of economy appears to be very slow spanning into years to gain normal status. The spread of virus into different regions and the consequential work disturbances are affecting the businesses and production activities. It appears that till long-term solution of developing vaccines becomes

a reality, the uncertain situations will continue to bother the economies and governments.

Social Impact of Covid Virus

Social isolation is the order of the day during the Covid times. Isolated working and living have become new lifestyles. Man is a social animal and social isolation is a big threat to a healthy society. As Covid virus is infectious and spreads fast in communities through physical contact, isolation is suggested by the health authorities including the WHO. Loss of jobs are making people depressed. Psychologists are advising people to develop positivism to deal with isolation problems.

In India, reports are abounding that the Covid virus fear brought radical change in social relations. Communities are isolating Covid-infected people and families. It is distressing to hear the news that even family members are not coming forward to take the dead bodies from hospitals for last rites due to fear of virus. The social bonds are strong in Indian families. But the virus fear created panic behaviour among people affecting the normal social relationships. The governments are imposing restrictions on family and social gathering. This has affected the marriages and other ceremonies in Indian families where number of people gather and share. At present, nobody has ready answers to the critical problem of isolated living. It demands new relationship pattern—that is learning to maintain relationships even from distance. Going beyond the traditional beliefs, relationship in distance should be the new norm in Covid times that is, physical isolation but socially-related. This requires mental change. It is really a big challenge in traditional countries like India.

On education front, the shutting of educational institutions has created problems for students. Online education is being promoted as an alternate method. Though this may be workable in case of college students and high school students, it is not advisable for the kids. As there is no alternative, students are forced to adopt these methods. Educationists are divided on the efficacy of the method. Distance learning promoted for working people has now become inevitable for all students.

The distance living, distance working, and distance learning have become new social norms. Though this may be a temporary phenomenon, it may have long-term impacts on people—their relationships, minds, and lifestyles. People should quickly adopt to these lifestyles for better social living.

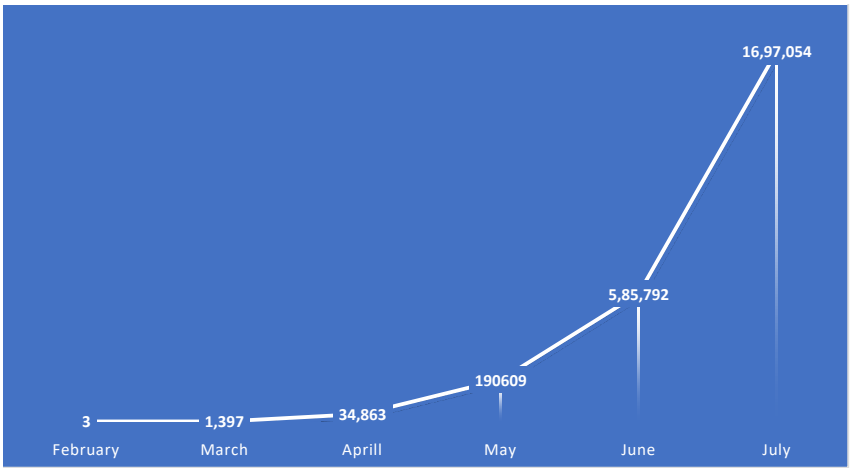
STATUS OF COVID VIRUS SPREAD IN INDIA

The survival of the Covid virus in humans depends mainly on the mutations in their genetic structure. Unfortunately, the virus has successfully mutated and survived in different regions. This has led to spread of Covid virus across regions and populations. Whether the Covid pandemic is fatal to human life is debatable and there are different related issues and deciding factors. Apart from this discussion, the main aspect is wider spread of the virus infections across communities. Even mild infections create health issues and lead to isolation. If isolation is neglected, virus will spread more rapidly affecting others.

The Covid-19 virus arrived in India in February 2020 itself. In February, the total cases in the country were merely three. While recognising the impending crisis, the country level lockdown was imposed in last week of March after the *Janata Curfew* on March 22. Since then the spread of virus was controlled to a large extent. Later, it appeared that the decision for lockdown and travel restrictions were a bit late as the damage had already been done during February and March due to some lapses in international screening and allowing a religious meeting at Markaz in February in Delhi which included thousands of foreigners. Some of these foreigners were already exposed to Covid virus in their countries, hence acted as virus carriers. Conducting meeting with thousands of members was a wrong decision which became a perfect platform for spread of virus among the members. As these people travelled to different parts of the country after the meeting, it led to spread of the virus across the country.

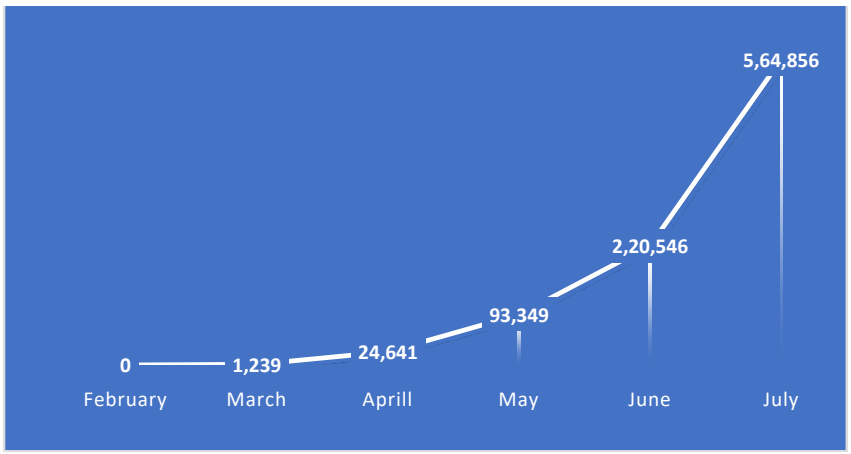
Despite these lapses, the virus spread was under control due to total lockdown. But, with the easing of lockdown controls since June, people started moving freely without proper care like maintaining social distance and wearing masks outside homes.Now, it has spread to such an extent that some call it, community spread in several regions in the country. Further, nearly 80 per cent of the confirmed cases are asymptomatic. The community spread and asymptomatic cases make people frightened to venture outside. The rapid spread of virus after the lockdown easing is evident from the progression of the virus spread in India. The virus confirmed cases which were just three in February, increased to 1,397 by March 31 before lockdown. During lockdown also there was gradual increase to 34, 863 cases in April 30 and 1,90,609 in May 31. But after lockdown easing, the cases spiked to 5,85,792 in June 30 and hiked to 16,97,054 in July (Fig. 1).[9] The rapid hike in the number of cases over two times in June and three times in July is clear from this data.

Fig. 1: Growth of Covid Virus cases in India



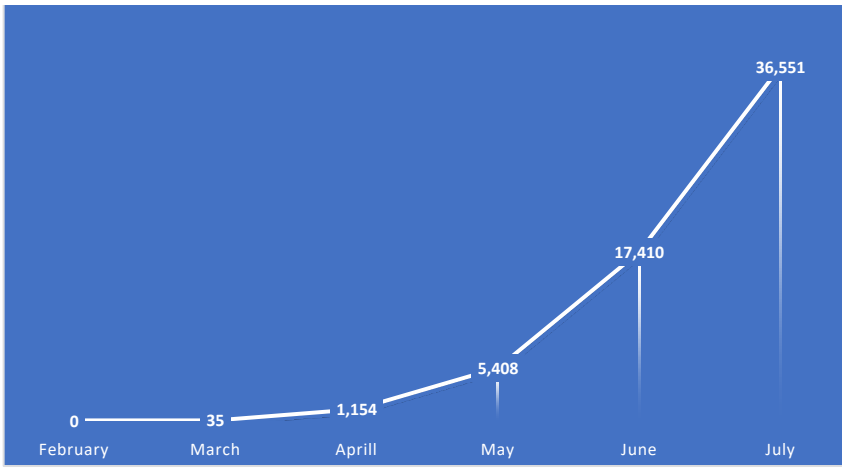
Source: Worldometers.info

Fig. 2: Growth of Active covid Cases in India



Along with the total cases, the active cases also increased. The cases which were 1,239 in March, increased to 24,641 in April and to 93,349 in May. After lockdown easing, the number increased fast to 2,20,546 in June and hiked to 5,64,856 in July (Fig. 2). The increasing active cases put more pressure on the health administration and the hospitals. Similar increase is also witnessed in number of fatalities due to virus infections. The deaths which were 35 in March increased to 1,154 by April and to 5,405 by May. After the lockdown easing, the deaths increased to 17,410 by June and 36,551 by July (Fig. 3). The fatality rate, however, has been low ranging from 3.2 per cent to 2.2 per cent.

Fig. 3: Growth of Covid deaths in india



State Level Scenario in India

The Covid virus has spread to entire India covering states and Union Territories. However, the spread is not uniform across the country. Five states namely, Maharashtra, Tamil Nadu, Andhra Pradesh, Karnataka and Delhi are worst affected as per the data reported on 9th August 2020 contributing to roughly 61 per cent to country total. The top ten states contributed about 81 per cent to country total (Table 1). Maharashtra tops the country list with 23 per cent contribution to the country followed by Tamil Nadu with 13 per cent. In case of active cases too, Maharashtra leads in country with 6.8 per cent (Table 1).

TABLE 1: STATUS OF COVID IN TOP TEN STATES – TOTAL AND ACTIVE

Sl. No.	*State*	*Confirmed Cases*	*Country Total*	*Per cent in Country*	*Active Cases*	*Per cent in Country*
1	Maharashtra	5,03,084	21,55,847	23	1,47,355	6.8
2	Tamil Nadu	2,90,907	21,55,847	13	53,481	2.5
3	Andhra Pradesh	2,17,040	21,55,847	10	85,486	4.0
4	Karnataka	1,72,102	21,55,847	8	10,667	0.5
5	Delhi	1,44,127	21,55,847	7	79,773	3.7
6	Uttar Pradesh	1,18,038	21,55,847	5	46,177	2.1
7	West Bengal	92,615	21,55,847	4	25,486	1.2
8	Telangana	79,495	21,55,847	4	22,869	1.1
9	Bihar	75,786	21,55,847	4	14,432	0.7
10	Gujarat	69,986	21,55,847	3	26,694	1.2

Source: mygov.in, Government of India, figures as on 03-08-2020.

Delhi which topped in the early months has been improving well in July due to concerted efforts of state authorities. Health facilities were upgraded as per the need. More testing and tracing victims helped in taking appropriate measures to isolate them.

In India, the high recovery rates and low death rates are the comforting numbers. As against the national average of 68.7 per cent, five states namely, Delhi, Tamil Nadu, Gujarat, West Bengal, and Telangana reported above country average figures (Table 2). Delhi reported about 90 per cent recovery rate, a commendable achievement. The reason could be that the recent measures have started giving results. The Karnataka has picked-up only in July reporting thousands of daily cases. Till July, Karnataka had reported lesser cases which were in hundreds only. The country fatality rate is two per cent. As against this, highest fatality rate of 3.8 per cent is reported in Gujarat. Bihar on the other hand reported lowest fatality rate of 0.6 per cent (Table 2). Further, Maharashtra, Delhi, West Bengal, and Gujarat reported above national average figures. Interestingly, the recovery rate is above national average in Gujarat, West Bengal and Delhi.

Status of Virus at City Level

The WHO and ICMR reported in May that 70 per cent of cases and deaths are occurring in the 13 major cities viz., 1) Mumbai, 2) Delhi, 3) Kolkata, 4) Bangalore, 5) Hyderabad, 6) Chennai, 7) Thane, 8) Pune, 9) Ahmedabad, 10) Indore, 11) Jaipur, 12) Jodhpur, 12) Chengalpattu 13) Tirunelveli. This clearly brings out the relation between human densities

TABLE 2: STATUS OF COVID IN STATES---RECOVERY AND FATALITY RATES

Sl. No.	*State*	*Total Cases*	*Recovered*	*Recovery Rate*	*Deaths*	*Fatality Rate*
1	Maharashtra	5,03,084	3,38,362	67.3	17,367	3.5
2	Tamil Nadu	2,90,907	232618.0	80.0	4808.0	1.7
3	Andhra Pradesh	2,17,040	1,29,615	59.7	1,939	0.9
4	Karnataka	1,72,102	89,238	51.9	3,091	1.8
5	Delhi	1,44,127	1,29,362	89.8	4,098	2.8
6	Uttar Pradesh	1,18,038	69,833	59.2	2,028	1.7
7	West Bengal	92,615	65,124	70.3	2,005	2.2
8	Telangana	79,495	55,999	70.4	627	0.8
9	Bihar	75,786	48,673	64.2	419	0.6
10	Gujarat	69,986	52,927	75.6	2,627	3.8
	Country Level	21,55,847	14,81,473	68.7	43,465	2.0

Source: Covid Statistics, Microsoft, Bing.[10] The data as on 09-08-2020.

and the Covid spread. A news report[11] brought out that five cities viz., Mumbai, Pune, Delhi, Ahmedabad, Chennai, and Jaipur contributed 50 per cent of the corona virus cases in India. Recently, Hyderabad and Bangalore are also picking up the momentum. The ICMR India assessment further states that the risk of Covid virus spread is 1.89 times more in slum areas in cities. All this indicates that the cities with higher densities are more prone to rapid spread of corona virus. The dynamics of virus spread are changing fast.

The status of virus spread in million plus cities indicates that the top ten million plus cities contribute to about 36 per cent of country total. Delhi, Mumbai, Pune, Chennai, and Thane reported over one lakh cases each (Table 3). The city of Thane is just outside the Greater Mumbai. If Mumbai and Thane are combined, their share in country comes to11 per cent. The urban concentration is more pronounced in respect of the state shares of the cities. Delhi state is totally urban. The state share of virus infections in other cities ranges between 56 per cent (Hyderabad) and 22 per cent (Thane). The burden of active cases is high in Pune and Bangalore cities with 41,256 and 33,727 cases respectively. The recovery and fatality rates are better in cities too. The Delhi recovery rate is 90 per cent followed by Chennai (87 per cent) and Ahmedabad (81 per cent). Bangalore reported least recovery rate of 52 per cent. The average recovery rate in these cities works out to 72 per cent. The fatality rate is low in India and the situation is same in cities too. The fatality rates range from 5.9 per cent (Ahmedabad) to 0.3 per cent (Kamrup Metro). In Mumbai also the fatality rate is high that is 5.5 per cent.

The above statistics are provided only to trace the trends of Covid virus spread in Indian cities. The cities played major role in spreading the Covid virus across the globe. As the data provided is district-wise in India, the information should be taken only as indicative. In fact, if the peripheral areas which are fast urbanising in India are also taken into consideration, the urban bias will be more pronounced. As the Covid virus is a developing story and the virus is spreading in rural areas in India, the dynamics may change over the time, but the urban bias largely remains.

INDIAN STRATEGY TO DEAL WITH COVID VIRUS-SUCCESSES AND FAILURES

The sanitation and health facilities maintained by the ULBs faced unprecedented pressure of work during the virus outbreak. On the one hand, the Covid virus has clearly brought out glaring deficiencies of the ULBs and the governments in meeting the pandemic demands, on the other hand, India has shown much spirit and made coordinated

TABLE 3: STATUS OF COVID CASES IN TOP TEN MILLION PLUS CITIES

City	*Confirmed Cases*	*State Nos.*	*percent in State*	*Country Total*	*percent in Country*	*Active Cases*	*Recovered*	*Deaths*	*Fatality Rate*
1. Delhi	1,44,127	1,44,127	100	21,54,028	7	10,667	1,29,362		2.8
2. Mumbai	1,22,316	4,41,228	28	21,54,028	6	20,211	95,354		5.5
3. Pune	1,09,988	4,41,228	25	21,54,028	5	41,266	66,089		2.4
4. Chennai	1,08,124	2,57,613	42	21,54,028	5	11,737	94,100		2.1
5. Thane	1,03,642	4,41,228	23	21,54,028	5	22,944	77,737		2.9
6. Bangalore	72,237	1,34,819	54	21,54,028	3	33,727	37,292		1.7
7.Hyderabad	43,348	77,513	56	21,54,028	2	11,345	31,694		0.7
8.Ahmedabad	27,745	63,562	44	21,54,028	1	3,722	22,393		5.9
9. Kolkata	27,241	75,516	36	21,54,028	1	6,980	19,334		3.4
10. Kamrup Metro	18,473	57,715	32	21,54,028	1	7,086	11,336		0.3

Source: Covid Statistics, Microsoft, Bing.[12] The data as on 09-08-2020.The actual data may vary slightly based on reporting timing in states. Hyderabad data sourced from a local daily.[13]

efforts to tackle the emerging problems. The medical facilities like beds, testing equipment and paramedical support was mobilised to tackle the problem. Covid hospitals and facilities like new wards, kits, technical support, etc., in the hospitals were upgraded to treat the Covid patients which involved special care and isolated treatments. The strategy of total lockdown as recommended by the WHO was imposed in March last week itself as an emergency measure.

This curtailed the movement of people in cities and towns. The police departments were streamlined to monitor the lockdowns strictly. The doctors, police, public health staff of the ULBs and the other health workers took main burden of the Covid virus problems. These were considered warriors to fight Covid virus. The central and state political leadership also gave top priority to tackle the Covid virus. Frequent political and administrative level consultations between Centre and the states and concerned agencies at the state level were done to monitor the situation. The state health departments played a significant role in coordinating various other agencies involved like ULBs, hospitals (both public and private), police, and district administration. In the beginning, the lockdowns, strict controls on movement of people, tracing the contacts and helping the patients reach hospitals, designating containment zones and hot spots across the country for close supervision, etc., gave good results as the spread was controlled effectively.

Initially, the virus was transmitted through international travel. Therefore, screening of the international travellers helped identifying affected persons and quarantining them for at least 14 days which is considered incubation period for show of symptoms. Later, the virus spread continued across India due to some lapses in screening the international travellers. The famous Nizamuddin Markaz religious event in Delhi involving thousands of foreign nationals and Indians was organised which led to wide spread of the virus after the event. National and international flights were totally banned to control transmission by air travel. The international travel ban is carried-out for long period. The rail and bus travel were also banned.

From Lockdown to Unlocking—The Emerging Scenario

Though local level measures like closing down schools and colleges and banning congregation of people in public places were taken in cities like Hyderabad in the beginning, the national level lockdown was imposed in the last week of March 2020. The national lockdown was not done in a planned way. It was a sudden decision by the Government of India. The sudden lockdown had put tremendous pressure on the state

authorities to respond immediately. Slowly, the states came to terms and cooperated with central decision.

In India, urban migration for livelihood has been a steady process and reached high levels over time in large cities. The migrant workers became the backbone of various government and private sector projects. Bulk of the migrant labourers live in slums and sometimes on the project sites themselves with temporary shelter. The sudden lockdown had put tremendous pressure on the migrant labour. The commercial establishments, companies and construction works were closed leading to loss of livelihoods. To mitigate their hardships, the Central and state governments provided free monthly ration. Some voluntary organisations provided free food to jobless poor people. Despite these measures, some workers could not receive the benefits and there was growing pressure among the migrant workers to return to their native places to be with their families in difficult times.

As all the businesses were closed, many shopkeepers could not even give rents. The governments were the worst affected financially as all their income sources depleted fast with the lockdowns and some governments like Telangana and Andhra Pradesh could not even pay salaries to their employees. Employees and their families had to satisfy with half salaries only. All government works came to standstill.

The lockdowns caused much hardships to all—people, workers, industries, and governments. The Indian economy was slowly drifting toward recession. However, every country—developed and developing, has faced this economic problem. Being a developing country, India could not bear the burden of lockdowns long. The Government of India started unlocking the economy. One after the other, all businesses were opened. Presently, only international travel, educational institutions, marriage halls and large people congregations have yet to be opened.

It appears that not much preparatory work was done before unlocking the economy. The consequences of opening were not assessed properly and taken care of with a clear strategy and action plan in many states. The medical infrastructure and facilities remained fragile despite some improvements done during the initial period. The lockdowns were lifted without streamlining health systems. The removal of lockdowns and the opening of the businesses led to free movement of the people on the streets, especially in the cities. Many intellectuals opined that the governments should have eased lockdown restrictions more slowly while assessing their impact and taking necessary remedial measures at each step.

People as usual ignored the safety measures like maintaining

social distancing and wearing masks in public places. Some influential people behaved irresponsibly by organising large birthday parties and other functions. Though congregation of people was not allowed, some irresponsible people managed to break the rules leading to widespread of the virus. It was visible that states were in a hurry in unlocking while people felt relief from controls and carried out their businesses as usual.

The initial spirit, discipline and commitment, which were displayed earlier, dissipated fast. The governments shifted their attention from Covid to other areas. The health machinery slowly adopted a casual approach. This led to deficient functioning of health system causing severe problems to the Covid victims. Each organisation started functioning in its own way. The casual and sometimes callous approach on the part of the public authorities has replaced the earlier spirit of concern for Covid victims.

Most of virus victims with mild symptoms and no symptoms are put under home isolation. It is reported that people are not following isolation rules and roaming freely outside. This is another problem not taken seriously by authorities concerned. As a result, virus spreads freely in the communities.

All this led to the spread of Covid rapidly, overburdening the fragile health system. It is unfortunate that though some improvements are made to major hospitals, the status of primary health centres is very poor. In Hyderabad, it is reported that there is only one primary health centre for two lakh people as against the national norm of one primary health centre for 25,000 people[14]. Added to this, there are gross inadequacies in respect of qualified technicians and doctors to provide necessary medical services during the Covid times. As the primary health care is in doldrums, people are either flocking to big hospitals or private hospitals. The biggest problem appears to be asymptomatic Covid victims. Many people do not even know that the virus attacked them as they do not see any health issue. Such people without knowing, transmit the disease in the community. The doctors and scientists say that 80 per cent of people do not show any symptoms. The spread of disease by such people is also another big problem especially to their families and the people to whom they have close contacts. The doctors say that the most unfortunate Covid victims are people having other health issues like blood pressure, sugar, cancer, etc. The fatality rate is high among these victims.

Another area of concern is the functioning of the private hospitals. The governments have allowed private hospitals to test and treat corona patients. Unfortunately, the private or so-called corporate hospitals

started exploiting the patients by charging very high rates compared to government prescribed rates and creating artificial shortages of medicines and facilities. Due to lack of strict monitoring over them, the private hospitals continue to exploit people in multiple ways. The media is continuously bringing out this issue. Recently, thousands of complaints were received by the Government of Telangana on this problem and government is taking some measures to control the private hospitals.

On 12th June, the Ministry of Health, Government of India reported that the rate of corona virus spread is coming down steadily in India. It was informed that the daily growth rate which was 38.2 per cent in March 2020 had come down to 3.24 per cent by 12th July 2020. Further, it is stated that much of the Covid virus spread that is 86 per cent of the active cases are confined to ten more affected states with Maharashtra and Tamil Nadu contributing to about 50 per cent of the cases. Karnataka, Delhi, Andhra Pradesh, Telangana, West Bengal, Uttar Pradesh, Gujarat, and Assam contributed to 36 per cent of active cases. It is also said that the recoveries are overtaking daily cases in many states and in entire India by 1.8 times.

Against this rosy statistical information, the fact remains that the virus is spreading fast not only in the cities but also in the rural areas which were safer till now. This is another emerging problem in India. The emerging numbers indicate this problem. The number of daily cases in country which was below 8,000 before lockdown easing in May, increased to over 19,000 in June, and 50,000 by July and the present figure is about 60,000 on 9th August. The state level figures also indicate this trend. As per analysis done by *Indian Express* daily[15], the rate of increase of cases in July over June was considerable ranging between 35 per cent in Delhi to 89 per cent in Andhra Pradesh. The Karnataka and Bihar states also come in the higher range 80-87 per cent (Table 4).

COVID CONTROL INITIATIVES

International Experience

At the global level, some countries like Germany, New Zealand, South Korea, Singapore, etc., successfully controlled the Covid spread. The effective strategies normally adopted by the governments were mobilising local level health facilities, better coordination and monitoring of Covid activities, testing, better contract tracing and isolation methods. Counties like India, Australia and USA followed lockdowns as a measure to control the Covid virus. But Taiwan controlled the Covid virus effectively without adopting to disruptive lockdown approach.

TABLE 4: INCREASE OF CASES IN TEN SELECT STATES IN JULY

Sl. No.	*State*	*Total no. of cases*	*Addition in July*	*Per cent Increase in July (in per cent)*
1	Maharashtra	4,22,118	2,47,357	58.60
2	Tamil Nadu	2,45,859	1,55,692	63.33
3	Delhi	1,35,598	48,238	35.57
4	Andhra Pradesh	1,40,933	1,26,338	89.64
5	Karnataka	1,24,115	1,08,873	87.72
6	Uttar Pradesh	85,461	61,969	72.51
7	West Bengal	70,188	51,629	73.56
8	Telangana	62,703	46,364	73.94
9	Gujarat	61,438	28,992	47.19
10	Bihar	50,987	40,999	80.41

Source: Indian Express, Sunday, August 2, 2020.

The cases of Taiwan and New Zealand are discussed further to highlight their strategies, which are well appreciated globally.

Taiwan-case of undisruptive initiative

Taiwan is a small island country like Hongkong and Singapore. It has just about one million population. The most important point here is that Taiwan is just 130 km away from China where the virus generated having active travel connections with China. In the light of its proximity and work connections with mainland China, it was expected that the country was more prone to Covid virus reminding the SARS 2003 experience. In 2003, Taiwan had highest mortality rate in the world. The earlier experiences might have warned Taiwan to take strict measures and strategies in the early stages itself. Result of these early strict measures is seen in the low Covid virus infection in the country. The country had just 455 confirmed cases including seven deaths as on 19th July 2020.[16] The globally appreciated strategies adopted are explained here.

Early Containment Measures And Border Control

Because of earlier SARS nightmare, the country has woken-up early on the day China reported the corona virus case to WHO on 31st December. Most of the other countries including USA at that time downplayed the issue and were not expecting it to spread into their countries on a significant scale. Another positive aspect was that the Covid response team was led by the experts. The Vice-President Chen Chien-jen himself is epidemiologist from Johns Hopkins University with

much experience in tackling the earlier SARS virus. The Vice-Premier Chen Chi-maiis a doctor himself and it was reported in Channel News Asia (CAN) on December, 31 that he had early knowledge of a typical cases of pneumonia virus which prompted him to take early responses to the emerging crisis. By January, 20, Taiwan's Central Epidemic Command Centre was activated.

Initially, the travellers from China were screened in early January 2020 itself. After thorough checks at airports, affected travellers were quarantined for 14 days strictly. Further, national health insurance data was integrated with the immigration database while allowing this data to all the hospitals treating the virus.[17] When the first confirmed case of Covid virus was reported, travel alert to Wuhan was alerted and travel from Wuhan and Mainland China was banned on 26th January, 2020.[18] As the virus started spreading across countries like Hongkong, Singapore and Malaysia travel of non-residents of Taiwan was totally banned.[19]

Avoiding Shortage Of PPE Kits And Masks

Effective measures were taken to prevent shortage of PPE kits and masks in hospitals. The supply chains were monitored strictly, and the prices of the essentials were totally controlled. Purchases of masks by people was rationed to avoid shortages. The manufacturing of masks was increased from two million per day to 16 million per day. The ban on surgical mask exports was also imposed against WHO advice.

Dedicated Clinic For Covid Patients

In the Chang Gung Memorial Hospital, separate Covid clinic was established exclusively for the Covid patients with total isolation from other units. Apart from these, testing facilities were expanded. For this purpose, 50 regional hospitals and medical centres and 167 community hospitals and clinics were designated to test the patients. Special wards for Covid patients were also provided in these medical centres for treating patients.[20]

Effective Utilisation of Technology

Digital health technology was used very effectively. The Chang Gung Memorial Hospital was provided with business intelligence (BI) to monitor healthcare of the patients by identifying the Covid risk patients and isolating them to control the spread. Further, with the help of smart phone technology, quarantined patients were effectively monitored.

At the outset, these measures appear to be common being followed by other countries. The real difference is the early measures and strict

implementation of the strategies on the ground. Controlling the virus spread without resorting to total lockdown is another achievement of Taiwan. It shows how strict the controls were. Finally, the citizen cooperation has been commendable.

New Zealand—The Case of Early Action

New Zealand is an island country with a population of 4.9 million in 2019 and has very less density of 17.3 persons per sq km. The success of Covid virus control in that country is really inspiring and a lesson to others. The early and strict measures in the beginning of February 2020 itself were the key points there. The strictness of the measures and commitment of the government is visible from the point that when just two cases were reported in New Zealand in June due to control breaches, the Health Minister resigned taking the responsibility. The main points of the strategy adopted in the country are outlined below.

Early International Travel Ban

The country started banning foreigners coming from or via China, the very next day when a person died of Covid virus in Philippines on 2nd February 2020. Any New Zealander coming from China was put to 14-day compulsory quarantine. At that time there were no corona cases in New Zealand. It is really a great early precautionary measure when the other countries were taking Covid virus issue lightly.[21] The moment first case was registered in New Zealand from a person coming from Iran, travel ban was extended to other countries like South Korea, Iran, etc., where the virus spread was observed. And from 16th March, except virus safe countries, all travellers were to go compulsory self-isolation on arrival. Later, after few days only an unprecedented measure was taken by the New Zealand Prime Minister Ms Ardern to close all international travel ban to all foreigners and residents too. This early measure largely stopped virus migration from other countries.

Early National Lockdown

The national level lockdown with four-stage alert system was introduced in the country when the country just had 102 cases with no deaths reported on March 25 as against UK the country had over 6,500 cases and 330 deaths when the lockdown was imposed in the country. Further, UK never closed borders except bringing self-isolation controls. It was argued that the country had to bear economic pain but the country experienced virus free and healthy life compared to other countries.

Proper Utilisation of Lockdown Period

The lockdown was used for conducting extensive testing and contact tracing for the virus. The victims were detected early and isolated for treatment. Though opposition leaders criticised the total lockdown for long periods, government continued the strategy. Interestingly, it is reported that 80 per cent of the people supported the government measures. The Prime Minister announced officially on June 8 that the country has successfully eliminated the Covid virus from the country at least for the time being.

Though the country experienced few cases later due to some lapses after lifting the lockdown, the situation is far better compared to the other countries which are still struggling. The international travel is still closed. Though critics lament on long period of travel ban, the country at least achieved success in controlling Covid virus spread in the country.

INDIAN EXPERIENCES

Dharavi, Mumbai—The Unique Success Story

Mumbai is not only the financial capital of India but also a most populated metropolis in the world. Even with geographical limitations, the city expanded wherever possible. The city grew into a large urban agglomeration with a population of 12 million population, occupying 8th place among the most populous cities in the world. The metropolis of Mumbai is the second biggest metropolis in India and includes cities of Navi Mumbai, Thane, Bhiwandi, and Kalyan apart from the Greater Mumbai. The UN estimated that the metropolis had a population of 25 million in 2014.

One of the main contributory factors for the rapid spread of Covid is considered the density of population in the cities.In Mumbai, the density of population is very high with approximately 73,000 people per square mile as against Tokyo with 11,000 people per square mile and New York's 6,000. In Asia, Shanghai has around 3,600 people per square kilometer as against 28,000 per square kilometer in Mumbai. More significantly, the slum of Dharavi has mindboggling density of 3,34,728 people per sq km or 869,565 people per square mile. This statistical information is given only to show the level of density in Dharavi, a great risk factor for the spread of Covid virus.

The famous Dharavi, Mumbai's biggest slum is also considered largest in Asia. It has over 10 lakh population. Density in Dharavi is about six times more than the other areas in Mumbai. The slum is very congested with mixed residential and commercial activities. About 80 per cent of people use community latrines and the streets are very

narrow. Almost each home has small business. With these factors, it was feared that the Covid outbreak in the slum may assume unmanageable dimensions.

But amidst fast growth of corona virus in other regions of Mumbai and Maharashtra, the Dharavi with several adverse civic exigencies, managed to control the Covid spread in the slum to a great extent. This is evident from the following growth figures. In Dharavi[22], the daily growth was 12 per cent in March, which got reduced to 4.3 per cent by May, 1.02 per cent by June, and to 0.3 per cent afterwards. The sustaining growth reduction is really a stupendous success in Covid control. No doubt, the initiative of Dharavi and the strategies adopted are appreciated widely in India and even the WHO praised the controlling measures.

In Dharavi, the strategy included several local measures taken more effectively. The following specific measures were taken to control the pandemic.

- The foremost was aggressive testing and screening covering about 85 per cent of the people in the slum. This has helped in tracing the potential Covid victims. After tracing, rapid survey was done covering 3.6 lakh people to identify old people. About 8246 old people were identified and isolated for special care.
- Another measure was setting-up fever clinics to identify the potential Covid patients.
- Developing necessary medical facilities and health staff was done locally. For this support of private sector was sought. About 90 per cent of treatment was done mostly in the local facilities.
- The other facilities like transporting the patients to the hospitals was also provided in local areas.
- As most of the people lived in very small tenements, home isolation was not feasible. To overcome this problem, several community level isolation centres were developed to isolate the people.
- Community participation is very important in the local level initiatives. Interestingly, local communities readily provided the needed support. To interact with communities, Covid community leaders were identified who bridged the gap between the local people and health workers.

The case of Dharavi is a model for other cities with high slum populations for in most cases the initiative stops with planning in India.

Such well-planned and executed strategies are needed in other cities also to control the spread of corona virus till the effective vaccine is produced and provided to all the needy people.

Kerala—The Case of Un-Sustained Initiative

In Kerala, large number of people migrated to foreign countries for employment. As people started coming back due to corona virus in other countries, the imported corona virus danger was imminent. The state foresaw such danger and made effective strategies to face the emerging problem. Kerala is the first state to experience the corona virus problem in India on January 30.[23] The state took effective measures like isolating the patients, contract tracing, quarantining the people coming from abroad which was the main source then, and streamlining the medical and hospital facilities and technical staff in the state to meet the health needs of the people. The earlier two Nipah outbreaks guided the authorities to take early action on the Covid virus. The decentralised local government system in Kerala helped the authorities to control the virus. These measures were carried out more vigorously. The mobilisation of resources from different departments was done to support the ground activities. Active people's participation, community kitchen to feed the poor, rationing of essentials and psycho-social counselling to alleviate victims stress were other supportive measures which worked well. With these measures Kerala could control the spread of virus to a large extent. In April, the Covid cases were only 1,823 which increased to 8,380 in May. On May 4, there were just 16 active cases in the state.

The Kerala story gets reversed in the subsequent months. With the easing of lockdown controls, the Government of India started the repatriation missions to bring back Indian workers struck in other countries. Kerala has large number of people working abroad. As influx of people was expected, the Kerala government wanted to test the returnees at the airports itself to control the virus import. As this could not materialise, multilayer screening was adopted to identify and isolate the infected persons. The influx of migrant workers which started on 7th May increased to over a period. The influx already reached the six lakhs figure. The state and local authorities struggled to provide isolation centres to the migrant workers. In the meantime, there developed a shortage of testing kits. The tests were restricted to only the highly risky sections of the people. Several types of tests like RT-PCR, antigen, antibody, TrueNat, CBNAAT, etc., were introduced to cover all the people having influenza like symptoms. The influx of people from other regions accentuated the problem. The mitigation measures are being increased in recent days. With the resurgence of Covid virus,

infections from unknown sources surfaced in Thiruvananthapuram. Another cluster of Covid virus developed in Malappuram taluk. The virus has steadily increased in the state. This is evident from increase in the cases to 18, 522 in June and to 55,078 in July. It appears that the lockdown easing effect was also experienced in Kerala. The positive aspect is restricting the death cases in the state to about hundred.

Delhi-Latewell Controlled Initiative

Delhi experience shows that it is the reverse of the Kerala experience. Delhi is the capital of the country and hence needed increased efforts to control the Covid. But initially the state administration showed laxity which led to spread of the Covid. The incident of Markaz where several thousand foreigners assembled for religious purposes triggered the virus spread not only in Delhi but across the other states. The Delhi authorities could not cope with increasing spread of the disease due to coordination problems. The daily rate of growth was around six per cent in June.

With the support of the Central Government, the state took some effective measures to control the rapidly spreading disease. The medical infrastructure facilities were upgraded with developing a large medical facility in the Sardar Patel hall. This facility has 10,000 beds with latest medical equipment and facilities to cater to the demand of all the patients. The important measure was increasing the number of tests from 4-5 thousand daily to 20 to 25 thousand. This helped the authorities to trace the corona patients early and treat them in time. Another innovative measure was setting up of Plasma Bank to meet the needs of patients. Plasma treatment has shown some positive results in India in treating the critically ill patients. This facility has helped the plasma therapy on Covid patients. This practice is being followed in other states too in India.

With all these stringent and coordinated measures, the virus spread is controlled. For instance, the daily growth rate has come down from six per cent to 1.7 per cent by July.[24] The recovery rate is also increased to over 90 per cent. Resultantly, the recovery numbers are more than the daily detected cases. These initiatives must be continued further to control the Covid virus spread.

The above experiences reflect the responses of governments to cope with Covid virus problem and to control its spread. Smaller countries like Taiwan, Singapore, Hongkong and New Zealand have responded more effectively achieving sustainable results. Even bigger countries like Germany, Canada and Australia have done reasonably well in limiting

the Covid virus spread. USA, Russia and UK in the developed world and countries like India, Iran and Brazil in the developing regions are still struggling with the Covid crisis. Each country followed its own strategy based on local economic, political, and social conditions and limitations. The initiatives and experiences so far reveal the changing dynamics. If some countries like New Zealand and Taiwan succeeded in controlling the virus spread, other countries displayed mixed results. In India, controlling efforts varied from state to state. If Dharavi is a unique case of Covid virus control in an extremely adverse conditions, the experiences of Kerala and Delhi are typical. Kerala experienced earlier success which reversed during the later period. At the other end, Delhi which suffered fast virus spread in earlier months, took effective control measures, and succeeded in July. The current world picture shows that only few countries have been successful in controlling virus spread while others are experiencing different stages of up and down. The main lesson that emerges from this dynamic experiences is that as long as the effective administrative measures were put in place strictly, virus spread was controlled and the moment people and authorities became complacent, the virus surged again. The constant alertness and sustenance of strict measure are therefore essential till effective vaccine is developed.

Road Ahead

Covid 19 virus is a developing story. Everyday new knowledge and information is flowing across the globe. As the virus is behaving differently in different countries, each country has a story to tell. In India, if cases are on increasing trend, some are hoping that it may help in developing herd immunity among the people. Their argument is supported by increasing asymptomatic cases in the country.

In May, the Indian Council of Medical Research (ICMR) had done a study to find the anti-body levels in communities in 83 select districts covering 21 states which were affected. The antibodies were found only among 0.73 per cent of their sample. The virus antibodies are indication that the persons were affected by virus and developed antibodies. Recent studies done indicate substantial increase in the percentage of people with antibodies. Asero survey was done in Delhi by the National Centre for Disease Control (NCDC). It conducted the IgG antibody and infection survey using COVID KAVACH ELISA which is approved by Indian Council for Medical Research (ICMR) during June 27 and July 10. The survey was done across 11 districts in Delhi covering 21,387 cross section of people. It was found that 5,022 of the sample had developed antibodies against COVID-19.[25] This indicates a figure of 23.48 per cent which by implication is said that 44.6 per cent of Delhi population

would have developed antibodies. Some private testing labs have also done the antibody tests on public. The Thyrocare, a private testing lab has found antibodies in 1,340 of the 3,956 samples it tested, indicating a positivity rate of 33.8 per cent in Delhi. In Mumbai, two private labs namely, Thyrocare and Suburban Diagnostics Lab conducted the antibody tests in Mumbai. Thyrocare had tested 5,485 samples in the city came to conclusion that 1,501 or 27.3 per cent of the samples had antibodies. The Suburban Diagnostics lab also found that 830 or 20.2 per cent of the 4,105 people it tested had developed antibodies against COVID-19. Another Serological Surveillance for Sars-cov2 study such survey was done in three wards covering 7,000 people in slum and non-slum areas.[26] The results show that 57 per cent of people living in slum areas have developed antibodies as against 16 per cent in non-slum areas. These people have no symptoms of the virus but developed antibodies, perhaps infected earlier. Experts feel that the Covid virus has mutated and became less viral in India. These studies prove that the Covid virus does not harm much in majority cases. Other reason could be that more and more youngsters who work and move outside homes in the age groups of 30-50 years are getting infected and most of them remain asymptomatic. This is proved to be true as per a study by health department, Government of Telangana. It was observed that 47 per cent Covid victims were in the age group of 21-40 years and another 18.7 per cent in the age group of 40-50[27]. One danger is that these people may spread virus affecting old people in their families. Similar trends were reported in other countries too. This is another ticklish problem arising out of Covid virus.

Another aspect relating to spread of the Covid virus is testing. In respect of testing, USA stands first in the world as the country conducted over 60 million tests whereas India conducted over 20 million tests as on 3rd August 2020. Some argue that number of cases are increasing in the countries because of increased testing. The antibody tests indicate high levels of prevalence of the virus spread. In respect of testing too, the percentage of cases turning positive indicates the level of virus spread in broad terms. In India, the percentages are between 15 and 20. In states like Tamil Nadu, Andhra Pradesh, and Telangana where number of tests is on the rise, the percentage of positive cases also increased. In USA too, in some states like Florida where virus is spreading fast, the percentage of positive cases which were about 3.5 during May increased to 18.7 by July. The purpose of all the antibody and rapid testing is to identify the positive cases and assess the levels of virus spread across the community. These measures will only serve surveillance of the spread and caution the public authorities to take appropriate measures to curb the spread. Large number of people may be asymptomatic not

requiring hospitalisation. But along with the spread of the infections, number of people requiring hospitalisation also increases which puts more burden on the existing health infrastructure and services. The shortage of beds and ventilators have become frequent occurrences. Every country faces this problem and in developing countries like India, it will be more critical.

The increase in the antibodies among people and increase in the asymptomatic cases is a tricky issue having positive as well as negative dimensions. The increasing trend supports the herd immunity argument as most of these affected people are asymptomatic. The negative side is it indicates increasing spread of the virus among people. These dilemmas remain in future too. Though pharma industry and scientists are racing to find vaccine as soon as possible to mitigate the sufferings of people, the effectiveness of these vaccines remains a question mark.

In the meantime, living with Covid virus demands changing life and work styles. New patterns of work will emerge focusing on social distancing, work from home and digitalisation. This is happening not only in the IT sector but also in other sectors like industry and offices. As the virus spread is expected in waves with occasional highs and lows, isolated temporary lockdowns become necessary to deal with the situation in the areas where the virus spread becomes unmanageable to the authorities. This is already happening in India. Hence, the industries and offices should be ready with alternate plans to continue their businesses and reach targets. This will be a stupendous task as they face disruptions from the workers who get affected by virus and the occasional lockdowns.

At the other end, virus goes on spreading from urban to rural areas due to movement of people between rural and urban areas. Covid virus is travelling along with people to secondary cities and rural areas. This is already visible in India. The rural areas where health facilities are very poor, the spread of virus creates more severe problems to the people and authorities responsible to deal with it.

Unfortunately, people continue to suffer from the virus. In countries like India, poor responses from authorities are common. Private hospitals on the other hand keep busy in searching for opportunities to make money. All these problems put people to much hardships and personal loss. Hence, people should become more responsible instead of just fighting with the overburdened and unresponsive authorities, strictly follow the minimum health directives given by the authorities and should take adequate personal care like wearing masks, avoiding crowd, and maintaining physical distance.

As the uncertain situation continues till a reliable vaccine becomes a reality, the governments should continue the efforts and maintain the system set-up for tackling the Covid virus problem with same tempo. The following administrative measures are essential to tackle the Covid problem in an effective and sustainable manner.

1. The action plan should always be ready with dedicated teams with necessary staff and technical skills at national, state, and local levels.

2. Involving the experienced NGOs is essential as these organisations could work more effectively on the ground maintaining good rapport with local communities.

3. Almost all countries, developed as well as developing are facing shortage of essential medical equipment. Though the governments have improved to some extent during Covid crisis, there is still lot to be done. Especially, the shortages are a big problem in the populous countries like India as governments serve a greater number of people. News reports are flowing daily in India about the poor facilities and services in the government hospitals. Even the doctors are complaining against shortage of essential staff, equipment, and facilities. The situation demands upgradation and more spending on the medical necessities in tune with the demand.

4. Apart from upgrading and increased spending, more important issue in India is effective monitoring of Covid operations. Many a time, problems arise due to neglect and lack of proper coordination among the agencies concerned. Lack of coordination is the bane of Indian administration. Authorities prefer to blame others whenever a problem arises than functioning responsibly. Integrated and shared work patterns among the concerned authorities are essential to deal with critical situations.

5. Private hospitals operate on corporate methods and profit motive. This is their normal functioning. Unfortunately, certain inhuman practices are being followed in some hospitals taking advantage of usual slackness in monitoring. As a result, Covid patients are left to face much hardship and exploitation. Denying admissions to the needy patients under different pretexts and charging exorbitant rates ignoring the government fixed rates are the complaints pouring across the country. This is a dangerous problem and should be corrected by strict monitoring. In times of health emergencies like Covid

virus, governments should adopt stringent approach. Strict monitoring is utmost important to ensure that the private hospitals follow minimum standards and rates fixed by government.

6. The most important aspect is sharing of vital Covid information across the authorities in the country. The IT which is aggressively adopted in private and public offices should be appropriately used for Covid activities and monitoring. In India, the e-governance has become a catchword. It is good that government operations are being digitalised for efficiency. But the utilisation of these IT models depends on the people manning the system. If it is effectively used by people, it could yield the results and reversely if not properly used. IT is only an administrative aid, by just installation it itself cannot yield the desired result unless authorities utilise it effectively and rightly. India has long way to go in this respect. In the emergency situations like Covid crisis, information sharing is vital for timely and right decisions. The IT enabled Covid models have enormous scope here. It is imperative that India adopt this approach vigorously and benefit from it.

7. In federal countries like India, the national level governments can devise guidelines, monitor state-wise, provide technical and financial support to the states and take such other measures like ensuring enough PPE kits, surgical masks and ventilators are supplied to the needy states. The success ultimately depends on how effectively the state and local authorities are delivering the health services on the ground. Every state should prepare its own action plan and implement it strictly. Unfortunately, governments prepare good plans, but their implementation suffers. Unfortunately, this casual approach is seen even in Covid crisis management in India. In health emergency times, the governments should adopt crisis management approach rather than following as usual approach. Proper resource mobilisation--financial and human, providing necessary medical kits, strict monitoring of all Covid activities including private hospital monitoring and frequent consultation across the concerned authorities on day-to-day basis are essential to deal with emerging Covid crisis effectively.

Finally, the countries which are doing well in crisis management are controlling the virus better compared to other countries. This is evident from the experiences of Taiwan, South Korea, and New Zealand globally and from certain local initiatives as discussed in this paper.

The struggling countries and regions could either follow these well-appreciated models or devise their own innovative models to control the Covid virus spread and mitigate the problems of the people till a permanent medical solution emerges. Ultimately, administrative wisdom tells us that well-planned and executed strategies and, cooperative and sustained initiatives are a success mantra in Covid virus control.

Footnotes

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