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COVID-19: Fighting CoronaVirus

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Origin and Rapid Spread of the Pandemic

At the end of December, public health officials from China informed the World Health Organization that they had a problem: an unknown, new virus was causing pneumonia-like illness in the city of Wuhan in Hubei province. They **quickly determined** that it was a coronavirus and that it was rapidly spreading through and outside of Wuhan.¹

Today, the entire world is seized with the menace of CoronaVirus (COVID-19) believed to have originated in China. The first reported case was on 31 December 2019 and now 188 countries are affected. The World Health Organisation (WHO) declared it a pandemic on 11 March 2020. Although China has now reported that it controlled and contained the epidemic, the virus has spread rapidly to cover almost the entire globe.² The new hotspots are USA, Italy, and Spain, with Italy and Spain reporting 10779 and 7340 deaths respectively while the USA accounts for 2489 deaths; compared to China's 3304 deaths.³ India as on 30 Mar 2020 had reported 1100 cases with a death toll of 29. Till date 735,015 cases are reported and the numbers are rising. 34,804 people have died and 156,122 have recovered. A total of 544,089 cases are still active and about 5% of these are critical. Of the closed cases, 18% have been reported to have died. Worst affected is Italy. India has reported 1100 cases as on 30th March 2020 and in the last two days more than 200 cases have been added to the affected number.⁴ In this connection, the alarming aspect is that while it took 40 days for the first fifty cases to come up, the next 50 were reported within a day, despite the Janata Curfew on 22 March.⁵ This makes the situation critical and though India may not be in Stage III (community spread) as yet, it looks like that we are close to it. According to media reports on 23 March 2020, Kerala and Bhilwara in Rajasthan have probably descended to Stage-III.⁶ Dr Ramanan Laxminarayanan, Director of Center for Disease, Economics and Policy has warned that India could be dealing with a tsunami of COVID-19. As per his estimate, India could be dealing with as many as 300 million cases of which 4-5 million

¹ Nicole Wetsman, "Everything you need to know about the coronavirus", The Verge, 13 March 2020, <https://www.theverge.com/2020/1/23/21078457/coronavirus-outbreak-china-wuhan-quarantine-who-sars-cdc-symptoms-risk>.

² Sarah Newey and Anne Gulland, "The Government's coronavirus lockdown advice, explained", The Telegraph UK, 21 March 2020, <https://www.telegraph.co.uk/news/2020/03/24/walk-dog-government-coronavirus-advice-leave-house/>.

³ <https://www.worldometers.info/coronavirus/>.

⁴ <https://www.worldometers.info/coronavirus/>.

⁵ Update as of 23 March on NDTV.

⁶ Media Reports on 23 March 2020.

could be serious.⁷ India needs to take a note of this rate criticality. As the Prime Minister in his address to the nation stated, the situation is grave, serious and every Indian needs to act responsibly to fight the menace with determination and show utmost discipline in personal conduct.

Basic information about CoronaVirus

Corona viruses are a large family of viruses which may cause illness in animals or humans. In humans, several corona viruses are known to cause respiratory infections ranging from the common cold to more severe diseases such as Middle East Respiratory Syndrome (MERS) and Severe Acute Respiratory Syndrome (SARS). The most recently discovered coronavirus causes coronavirus disease (COVID-19). The most common symptoms of COVID-19 are fever, tiredness, and dry cough. Some patients may have aches and pains, nasal congestion, running nose, sore throat or diarrhea. These symptoms are usually mild and begin gradually. Some people become infected but don't develop any symptoms and don't feel unwell. Most people (about 80%) recover from the disease without needing any special treatment. Around 1 out of every 6 people who gets COVID-19 becomes seriously ill and develops difficulty in breathing. Older people, and those with underlying medical problems like high blood pressure, heart problems or diabetes, are more likely to develop serious illness. Antibiotics do not work against viruses and as such are ineffective against COVID-19. It is not certain as to how long the virus causing COVID-19 survives on surfaces. Preliminary studies suggest that COVID-19 virus may persist on surfaces for a few hours (three hours in the air) or up to several days (three days in case of plastic and stainless steel) depending on type of surface and weather conditions.⁸ Corona virus virions are spherical with diameters of approximately 125 nm as depicted in recent studies by cryo-electron tomography and cryo-electron microscopy. The most prominent feature of this virus is the club shaped spike projections emanating from the surface of the virion.⁹ Therefore, the size of this virus is such that even a cloth is opaque for it¹⁰. Also because of this large size it is difficult to travel through air.¹¹

Initially, scientists thought that the contagion could spread through humans, however, the virus first infected people at a seafood market in Wuhan and spread from there. But an analysis of an early case of the illness, published on 24 January 2020, found that the first patient who got sick did not have any contact with the market. Experts are still trying to trace the outbreak back to its source.¹² The symptoms of COVID-19 have ranged from mild, like those in a cold, to severe. Around 80% of confirmed cases are mild —i.e., the cases that we know about. It's still possible that there are many more mild cases of the illness that haven't been flagged, which would shrink the percentage of cases that are severe. In about 15% of people, the illness is severe enough that they

⁷ A BBC Report, "India must prepare for a tsunami of coronavirus cases", 19 March 2020, http://www.bbc.com/news/av/world-asia-india-51962813/india-must-prepare-for-a-tsunami-of-coronavirus-cases_

⁸ A Times of India Report, 16 March 2020.

⁹ <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4369385>.

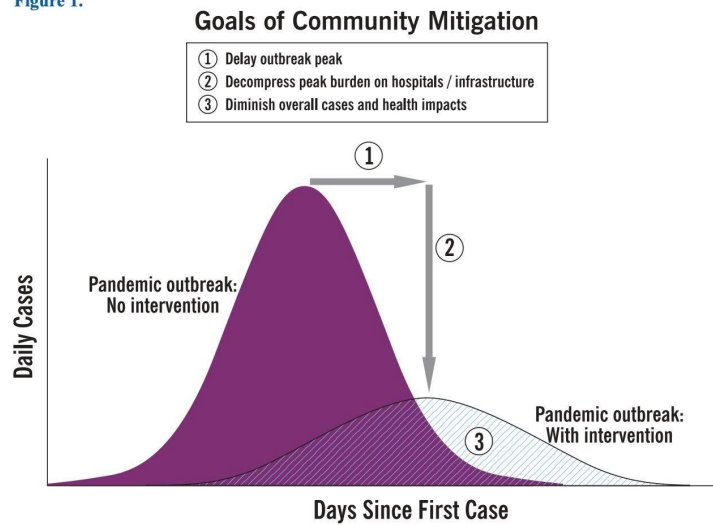
¹⁰ Media report.

¹¹ <http://www.who.int/health-topics/coronavirus>.

¹² Ibid.

need to be hospitalised, and about 5% of cases are critical. It appears around half of the people with critical cases of the illness die from it.¹³

Figure 1.



Source: Nicole Wetsman, “Everything you need to know about the coronavirus”, The Verge, 13 March 2020, <https://www.theverge.com/2020/1/23/21078457/coronavirus-outbreak-china-wuhan-quarantine-who-sars-cdc-symptoms-risk#PF8ukM>

There is no cure as on date for the COVID-19 as it would take extensive trials for a viable and proven vaccine. However, few Indian doctors did claim that the drugs for HIV treatment are effective against this virus. Humidity affects its growth but temperature does not appear to be having any effect on growth. However more trials will have to be done to confirm these findings.¹⁴

Vulnerability

In terms of risk assessment, elderly people above 80 years are highly vulnerable, followed by those who are already affected by breathing related disorders, diabetes, and blood pressure. As the age bracket reduces so does the vulnerability.¹⁵ Of the reported deaths in India, except for one, all deaths are of people above 60 years and had either travelled abroad to countries which are badly affected or had had contact with persons who had a travel history. It is also said that even those who are showing no symptoms also need to be tested because incubation period being what it is (it is believed to be 14 days), the symptoms may show only after a week or 10 days. Italy has suffered on account of the fact that it reacted late to the need for extensive testing. Initially, those who were asymptomatic were not quarantined and the virus spread through them. The matter, thus gets reduced to two or three aspects. Firstly, elderly people suffering from diseases like: coronary disease, diabetes mellitus and hypertension and those who have low immunity are most vulnerable. Secondly, at lower

¹³ Ibid.

¹⁴ PTI, “ No correlation between temperature variations and coronavirus spread: Experts”, Economic Times,10 March 2020, <https://economictimes.indiatimes.com/news/politics-and-nation/no-correlation-between-temperature-variations-and-coronavirus-spread-experts/articleshow/74560907.cms?from=mdr>.

¹⁵ Based on an interaction with Prof MLB Bhatt the Vice Chancellor of the King Georges Medical University Lucknow.

temperatures the virus has greater propensity to thrive. Thirdly, so far doctors have not been able to come out with any kind of definitive treatment for it; however, efforts to enhance immunity appears to be the only way ahead. Fielding an effective vaccine, development of which is at a feverish pace in the USA, will take not less than a year or two (China and other countries are also working on the same). In the interim extensive testing, quarantining and self-imposed discipline are the only methods to contain the spread.

If India enters Stage-III, it could become a herculean task for the government and health agencies to contain the spread in view of its large population, lack of awareness and social proximity. The current figures used to estimate the spread are likely to be inaccurate due to the limited amount of testing done so far, a fact severely impacted by capacity constraints of the health sector. The current capacity is about 5000 tests per day. It is important that large number of accredited labs in the private sector are roped in to increase the testing substantially. The government has recognised this urgency. Currently, testing is being done only for symptomatic people with a history of recent travel abroad. Clearly, this needs to be expanded. WHO has been quite appreciative of the efforts undertaken by India to control the spread of the virus and hopefully the efforts made by the state and central governments of India will ensure that the spread is contained within Stage-II. While it has been stated by a number of doctors that the probability of mortality on account of this virus is much less as compared to some other viruses (0.2-0.4 percent), its propensity to affect people is much larger.

An Appraisal of India's Readiness to Tackle COVID-19:

India's testing capacity per million as on 09 March was 11.6, less than the testing capability of the Republic of Korea (ROK) prior to the onset of the COVID-19, which was 11.8. ROK as on date has testing capacity of 6388 per million of its population. Although existing capability is being boosted by giving permission to 16 more chains in the private sector for establishing 15000 collection centres across the country; as a start, 60 private diagnostic laboratories have applied to the Indian Council of Medical Research(ICMR) for the approval. In addition, two indigenous companies have also been given approval for local manufacture of the testing kits. ICMR has also established a fast track mechanism for validation of non-US FDA EUA/CE IVD approval kits at ICMR's NIV Pune. It has been confirmed that more companies will be granted permission to manufacture the kit.¹⁶

1. Other Supporting Facilities:

Table-1

Serial No	Item	Details	Source
1	Isolation Bed	One per 84000	
2	Quarantine Bed	One per 36000	

¹⁶ Sushmi Dey, "So Far , 16 pvt labs get nod to carry out COVID-19 test, "Times of India, 24 March 2020, <https://timesofindia.indiatimes.com/india/coronavirus-16-private-labs-with-15000-centres-get-nod-to-test/articleshow/74783945.cms>

3	Doctor	One per 1457 against a WHO guide line of one doctor per 1000 patients. In rural areas it is one doctor per 10926 persons	Sanchita Sharma, "As Corona Virus cases surging in India, 40000 ventilators for 1.3 billion people a worry", The Hindustan Times, New Delhi, 23 March 2020.
4	Hospital Bed	One per 1826	
5	Ventilators	<ul style="list-style-type: none"> • A total of 40000 in India. • Assuming that 5% of COVID-19 patients need ventilator support in ICUs • Even if ventilators are made available training of paramedics available would be a major issue 	Ibid
6	ICU beds	Only 20% as compared to ROK	Ibid

The government has issued guidelines for private hospitals to reserve beds for isolation and testing.¹⁷ Also, Indian corporate sector has pledged its support in the fight against COVID-19 by establishing medical facilities, making monetary contributions and waiving service charges. As a start, Reliance Industries Limited (RIL) has established a 100-bed facility for COVID-19 patients. Tatas have pledged Rs 1500 crores for the prime minister’s fund to battle the virus. State Bank of India (SBI) has committed 0.25% of its annual profit for the current financial year to support health care for underprivileged people. Axis Bank has set aside Rs 100 crores for its customers, employees, vendors and government agencies.¹⁸ However with a meagre budget of 1.28% of the total budget of the Central Government, this may be grossly insufficient.

Geopolitics of CoronaVirus

There are a lot of allegations and analysis about the origin of this pandemic. President Donald Trump has, in his inimitable style, called it a “Chinese virus”, which has elicited

¹⁷ Sushmi Dey, “ CoronaVirus: Centre asks pvt hospitals to reserve beds for isolation and testing”, The Times of India, 18 March 2020.

¹⁸ Mamtha Asokan, “ India Inc loosens purse strings to battle Covid-19”, The Times of India, 24 March 2020.

sharp reactions from China. There are suspicions that the virus is a fall out from a biological experiment gone awry, in which not just China and the USA but many other countries were involved. There are suspicions of a US-led geopolitical strategy to target China's economy as well as a bio-war strategy by China to sort out the US-China trade war. Speculations are rife to allege this was a planned Chinese strategy to destabilise Western economies in order to buy out multinationals operating in their country. Similarly, there are allegations that it could be part of an international medical drug cartel who are going to get benefitted in the longer run; as and when some new protocol or medicine comes out to deal with the virus. Irrespective of these geopolitical conjectures, the reality is that the COVID-19 is now a global pandemic and it needs a global effort and global solution. However, the immediate concern is that it's spread is arrested. India, as a major pharmaceutical power, has the potential to address this challenge. India, which has fairly well-developed drug research infrastructure, is capable of developing cheap and effective solutions to treat this pandemic. There is however, a serious constraint where India is dependent on China to the extent of 80% of its requirement of API (active pharmaceutical ingredients).

India has been proactive in offering its assistance to countries, more so in its neighbourhood to combat the pandemic threat. Iran, which has been the worst hit in the region, has been provided a lab facility.

Similarly, India has led the way by pledging \$10 million as seed money for SAARC fund, with contributions from all members, to fight the COVID-19. India also provided medical equipment and medicines to assist China during the peak stage of the problem in Wuhan.

Economic Impact of the CoronaVirus

The global economy is already under pressure due to various restrictions imposed by all countries to combat the virus.¹⁹ According to JP Morgan economists, the global economy is likely to experience a very sharp contraction on account of the pandemic. They contend that the US share market will go down by 14% in the second quarter and Europe will suffer a 22% contraction, thus resulting in a global recession, even the US is likely to lose as many as 400,000 jobs.²⁰ The International Labour Organisation (ILO) estimates that COVID-19 will destroy up to 25 million jobs. According to UNCTAD it will cost the global economy between \$1 trillion-\$ 2 trillion.²¹

Impact on India:

According to Confederation of Indian Industries (CII), the growth rate of the GDP could fall well below 5% in FY 2021, if policy action is not taken urgently. CII is of the view that a strong fiscal stimulus to the tune of 1% of the GDP or Rs 2 trillion would help the

¹⁹ Lora Jones, David Brown and Daniele Palumbo, "Coronavirus: A visual guide to the economic impact", <https://www.bbc.com/news/business-51706225>.

²⁰ A JP Morgan Economists Report, "Containing coronavirus triggers a global recession in the first half of 2020," 20 March 2020, https://www.jpmorgan.com/global/recession/coronavirus_impact.

²¹ Malini Goyal, "Covid-19: How the deadly virus hints at a looming financial crisis", The Economic Times, 22 March 2020, <https://economictimes.indiatimes.com/news/economy/finance/covid-19-crisis-how-the-deadly-virus-hints-at-a-looming-financial-crisis/articleshow/74752200.cms>

consumer demand.²² Travel, tourism and hospitality sectors would take a huge hit. Other sectors are also likely to be impacted due to large scale withdrawal by the FIIs from the markets. However, with oil prices dropping below \$30 will provide some relief. Another silver lining is that China appears to have stabilised, which will help restoration of supplies from there.²³

Conclusion

While there is no cure as on date for the COVID-19 a comprehensive strategy and preventive measures will minimise its impact. Leading a regulated and a healthy life style, taking care of personal hygiene and keeping our environment clean will help common citizens fight this menace better. Emphasis on moral and social responsibility of people to share personal medical problems will further help authorities to tackle the problem. It is also interesting to note that preventive strategy to deal with COVID-19 flags the relevance of Indian customs of NAMASKAR, washing of hands and leaving footwear outside the house in the present context. The COVID-19 danger will require a long and sustained battle to defeat it. The human race is threatened as never before. Strategy to deal with it will have to be two-fold.

Firstly, as an immediate measure, India will have to find ways and means to contain it within Stage-II. Although the number of people affected is steadily rising, and in the absence of a robust health infrastructure, people's whole hearted support and cooperation will be the key to the effectiveness of all the efforts. Community support, support of religious leaders, efficient bureaucracy and a very alert political leadership are necessary to work in close coordination to generate awareness about the importance of social distancing and its strict implementation. Role of the corporate world by opening their coffers to bridge the gap in the desired and existing health infrastructure will be of vital importance. The Government, besides close monitoring, will also be required to ensure optimum utilisation of the existing health infrastructure and simultaneously help build indigenous capability for testing, isolation and emergency handling in the medical domain and in the domain of food, civil supplies and daily essentials; they will be required to work in tandem with the state governments to ensure effective implementation of all measures. The Government has announced a slew of fiscal stimulation measures amounting to USD 22.5 billion to address the needs of the poor, farmers, industrial stagnation, and small businesses; all of whom will take a major hit.

Secondly, certain long-term measures will also be required to be initiated at the earliest. First and foremost is the need to improve the public medical and health infrastructure across the country to cope with such pandemics in the future, as this is not going to be the last. Policy guidelines will have to be reviewed to incentivize the private sector to ensure their more active participation to develop the necessary health

²² Biman Mukherji, "CoronaVirus Impact: Indian Industry seeks Relief Measures to aid Economy," Live Mint, 23 March 2020.

²³ An ET Report, "Encash your SIPs, put all the money as a lump sum: Sunil Subramaniam", The Economic Times, 17 March 2020, <https://economictimes.indiatimes.com/markets/expert-view/crash-your-sips-put-all-the-money-as-a-lumpsum-sunil-subramaniam/articleshow/74649201.cms>.

infrastructure. As an emergency measure a large number of public and private institutions such as medical colleges will have to be roped in to train doctors, paramedics, nurses and skilled operators. It is relevant to note that the meagre budget of 1.28% of the GDP will have to be enhanced. The industry should be encouraged to bridge the shortfall of equipment like ventilators at the earliest. Certain policy directions to similar industries to change their product range will be required. Shortage of testing kits as on date is a major issue. Capacity augmentation will be the need of the hour. All required support should be provided to those who are engaged in developing the required vaccine at the earliest. International cooperation in this area is a must. There are 188 nations which are affected by this outbreak and international cooperation with friendly foreign countries will be of immense value for the successful fight against the COVID-19.

It needs to be realised that the outbreak of the COVID-19 is a global calamity but every calamity is also an opportunity and India needs to make sure that this opportunity is utilised well to improve country's medical and health infrastructure as also revise and update its policies for public health.



About the Author

Major General A K Chaturvedi AVSM VSM is an Indian Army Veteran, having retired in July 2012 after 38 years of active service. He is from the Corps of Engineers, has held a variety of operational and staff appointments. Post retirement he is very active in academic research and focuses on water security and regional geography. He is a prolific writer and his books have been published. He is a Senior Fellow with The Peninsula Foundation.

