Invited Article

The COVID-19 Outbreak: Learnings and The Way Ahead

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Summary

There are many unanswered questions related to COVID-19. Is it natural or artificial? How can it be contained? When will the medication be available for this deadly virus? What will be the future of the world order? However, one thing is crystal clear, biological agents, whether leaked accidentally or deliberately, whether natural or laboratory-made, have the power to bring the entire world to a situation of standstill. Apart from the immediate life-threatening effect, they also instigate long-term political, social, economic and psychological consequences that can change the world forever. COVID-19 opens a new world of challenges coming from the unseen and novel biological agents. Whatever the source be, the world needs to respond effectively and collectively based on the scientific remedies and ensure comprehensive biological disarmament.

We are living in a world of highly advanced technologies where drones can deliver pizzas, robots can serve food in restaurants, chatbots can help us online and more. In this world of IT (Information Technology) enabled lifestyle, things seemed to be perfect until a virus, without any alarming symptoms, entered into our lives, created havoc, and brought everything to an unexpected halt. How this virus, known as Corona, spread across the world? Is it natural or artificial? How can it be contained? Is there any medication available for this deadly virus? What will be the future of the world? There are many unanswered questions. However, one thing is crystal clear, biological agents, whether leaked accidentally or deliberately, whether natural or laboratory-made, have the power to bring the entire world to a standstill. Apart from the immediate life-threatening effect, they also instigate long-term political, social, economic and psychological consequences that can change the world forever.

To date, more than four million cases of COVID-19 have been reported across the world with over 312 thousand deaths. Despite having the best technologies, modern workforce and world-class infrastructure, even the most developed nations like the USA (United States of America) seem to be helpless in fighting against this lethal virus outbreak. With no medication and vaccine available for COVID-19 so far, the most significant question remains how can a comprehensive civil defence system be prepared against such outbreaks?

What is COVID-19?

Corona is the name given to the virus that causes COVID-19. COVID-19 stands for Corona Virus Disease-2019. International Committee on Taxonomy of Viruses (ICTV)

announced 'severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2)' as the name of the new virus on 11 February 2020. This name was chosen because the virus is genetically related to the Coronavirus responsible for the SARS outbreak of 2003. World Health Organisation (WHO) announced 'COVID-19' as the name of this new disease on 11 February 2020.[1]

Coronavirus belongs to the family of viruses that cause disease in animals. Seven, including the new virus, have entered into humans, with flu-like symptoms. Covid-19 is closely related to Severe Acute Respiratory Syndrome (SARS), which severely impacted the world in 2002-2003. was comparatively easier to control and had a lower transmission rate. Another Coronavirus is Middle East respiratory syndrome (MERS), which has been re-occurring since it first emerged in 2012.[2] COVID-19 is different from these Coronaviruses in terms of its nature. As the virus transmits from human to human, many people carrying COVID-19 may display no symptoms but work as carriers, making it very difficult to control. The symptoms of COVID-19 include fever, dry cough, breathlessness and headache. This could be one of the reasons for the late diagnosis of the disease as the symptoms are akin to normal flu. So far, no treatment or vaccine is available. Although many countries and research groups are working on developing treatment and vaccines for Corona. Presently, the medicines used for treating Malaria and normal fever are being used for the treatment of COVID-19. Till the right medication and vaccines are made available for COVID-19, there would be continuous chaos and panic across the world.

COVID-19: How it spread?

By the end of December, Wuhan Municipal Health Commission, China, reported mysterious cases of spread of an unknown virus that had symptoms similar to flu. Eventually, this novel virus was identified as Corona by the Chinese experts, later classified as COVID-19. On 4 January 2020, the WHO reported the cases in Wuhan on social media, with no deaths.[3]

Soon the cases started rising exponentially with reports of the death of few patients. As per the timeline maintained by the John Hopkins University and reported in Hindustan Times, by 23 January, China registered over 500 cases and 20 deaths due to COVID-19. By this time, Wuhan was put in a complete lockdown. By 3 February, China registered over 13,000 cases with nearly 500 deaths. By mid-February, this number crossed 60,000 with over 2000 deaths. China banned trade, consumption of wild animals, and postponed its annual parliamentary meeting.[4] Though, by this time, the virus had reached other parts of the world through travellers. Even at this stage, the world did not wake up to the alarming call of the Coronavirus and continued as business as usual. At this stage, China could have easily sealed its borders and stopped both incoming and outgoing flights. Unfortunately, this small mistake costed the entire world to suffer from a dreadful pandemic.

The first recorded case outside China was registered in Thailand on 13 January 2020. Post this, WHO experts from its China and Western Pacific regional offices visited Wuhan to analyze and understand the related facts and situation. The experts acknowledged the risk of a wider spread and by 30 January, the WHO Director-General reconvened the Emergency Committee (EC), which was constituted to analyze various aspects related to COVID-19 earlier. The EC advised the Director-General that the outbreak constituted a Public Health Emergency of International Concern (PHEIC). The Director-General accepted the

recommendation and declared the novel coronavirus outbreak (2019-nCoV) a PHEIC. Still, WHO remained reluctant to call it a pandemic. After registering cases reported in 18 countries outside China, and alarmingly growing levels of spread and severity of COVID-19 worldwide, WHO finally announced COVID-19 as a pandemic on 11 March 2020.[5] By this time, the virus had already spread in across the world and the experts were questioning the origin of the virus and China's role in this whole situation.

Role of China in Spread of COVID-19

The role of China in the global outbreak of COVID-19 is under question by many governments, institutions and experts. Many news articles, news channels and reports suggest that China not only provided wrong numbers about the infected people but also concealed the facts related to COVID-19 from the world, which resulted in a global outbreak. China too later admitted that it made mistakes in the calculation of the death toll and recording the infected cases. Many reports claim that China was busy hiding the facts instead of sharing them with the world. In fact, the whistleblowers were chided, who tried to raise the alarm for COVID-19 online, by the Chinese government. This was reported and shared by WHO officials.

"Wuhan, the COVID-19 epicentre, admitted gaffes in tallying its death toll, abruptly raising the city's count by 50 percent-following growing world doubts about Chinese transparency over the outbreak.

The WHO said Wuhan had been overwhelmed by the virus, which emerged in the city in December, and the authorities had been too swamped to ensure every death and infection was properly recorded.

Authorities in Wuhan initially tried to cover up the outbreak, punishing doctors who had raised the alarm online, and there have been questions about the government's recording of infections as it repeatedly changed its counting criteria at the peak of the crisis. Later, China added many more cases to its earlier reported numbers of infected people and the death toll."[6]

Also, there have been media reports on the unpublished data of the Chinese government that suggest the first case of COVID-19 was reported in China in November 2019. However, the official statements by the Chinese government to WHO reported that the first confirmed case had been diagnosed on 8 December. "Authorities did not publicly concede there was human-to-human transmission until 21 January. Jonathan Mayer, professor emeritus at the University of Washington's department of epidemiology, said it was 'entirely conceivable' there were cases as early as mid-November. He said there were three possibilities: that cases weren't detected at the time, that they were detected but not recognised as a new disease, or they were detected and recognised but reporting was suppressed."[7]

Then, the reason provided by the Chinese experts for the spread of COVID-19 is also under the radar of interrogation by many scientists and experts. The Chinese authorities believe that C OVID-19 spread from the local seafood market of Wuhan which sold wild animals like bats, rabbits and snakes. From here the transmission of the fatal virus from animals to humans might have taken place. Although a study by the scientists of Wuhan Institute of Virology claimed 96 percent similarities between the genetic makeup of the novel Coronavirus and the Corona found in bats. However, later studies by many experts questioned this claim as many of the initially infected people had no link with this market.[8] To date, the exact reason behind the spread of the

Coronavirus is under question and still requires detailed study. Similar claims by many scientists put a question mark on the nature of the Coronavirus itself. Many experts believe that Coronavirus is a laboratory-made virus. French Nobel prize-winning scientist Luc Montagnier claimed that the SARS-CoV-2 virus was an outcome of the Chinese attempt to develop a vaccine against the AIDS virus. In his interview with a French news channel, he explained that the Wuhan city laboratory has been working on Coronaviruses since the early 2000s. Montagnier, who co-discovered Human Immunodeficiency Virus (HIV), claimed the presence of elements of HIV in the genome of the Coronavirus and the probability of elements of the Malaria too. Although his claim has been discarded and criticised by many of his colleagues, still many experts are not denying the possibility of Coronavirus being a laboratory-made virus.[9]

Due to such claims and reports, China is now under question by many countries and experts who believe the virus has been accidentally or deliberately leaked by China as a part of its ambitious biowarfare program. In recent days, US President Donald Trump and Secretary of State Mike Pompeo also claimed that COVID-19 has originated from the Wuhan Institute of Virology in Wuhan. The two leaders also stated that China must explain why it declined to provide international scientists access to understand what happened. On the other hand, China has responded wrathfully to this allegation and has demanded proof for making such claims.[10] Thus, due to the lack of transparency, the origin of the virus has become a reason for a concerted US-China diplomatic conflict, fuelled by US officials calling the disease 'Chinese Coronavirus' or 'Wuhan virus'.[11]

Also, it has been alleged by Donald Trump that China stopped all incoming flights to its provinces however did not stop any outgoing flights that resulted in the global spread of COVID-19. It is also a matter of study how the Coronavirus was able to spread fast to the rest of the world from China, however, the neighbouring regions of Wuhan remained comparatively less affected.

After declaring itself almost COVID-19 free, wherein very few cases were getting reported post quarantine period, China itself has reported 14 new COVID-19 cases on 10 May. This included one new case from Wuhan where no new COVID-19 case was reported in over a month, as per the reports from Reuters.[12] This indicates the dangerous recurring tendency of the virus, wherein it may reoccur despite it's spread being contained.

Spread of COVID-19 around the World

The deadly virus has created unimaginable mayhem in all parts of the world. There are confirmed cases in at least 200 countries and territories across the globe. The US has reported the highest number of cases with over 1.5 million confirmed infections and over 89,000 deaths.

As in May, in Europe, the UK has been the worst impacted country. The UK Prime Minister, Boris Johnson himself struggled for his life after getting infected from Coronavirus. After the UK, Italy has recorded the highest number of deaths in Europe, with over 31,000 people while over 225 thousand infected people. Spain has over 221 thousand confirmed infections and over 27,000 deaths. Germany comparatively has numbers lower than other European countries with over 8,000 deaths.

Latin America has been a late entrant in the list of COVID-19 affected regions. However, now the Latin American countries like Brazil,

Argentina, Ecuador, Chile, Columbia and more are registering new cases of COVID-19 every day. Initially, Brazil did not endorse any lockdown mentioning economic reasons. Now, the number of infected people in Brazil are exponentialy growing. In this critical situation, its second health minister has resigned within a month indicating the internal political issues during such testing times.[13]

India, being the world's second largest populated country has registered over 1 lac cases so far with over 3000 deaths. It is following the step-by-step lockdown mechanism that helped in containing the virus. Otherwise, the projections made in April 2020 by the reputed institutions like Jawaharlal Nehru Centre for Advanced Scientific Research (JNCASR), Indian Institute of Science, Bangalore, Indian Institute of Technology (IIT), Bombay and Armed Forces Medical College, Pune through a joint study anticipated over 500 thousand cases and 38,000 deaths by mid-May in India.[14]

In the Middle East, where the countries have already been struggling to establish peace over cross-border conflicts and political instability, COVID-19 has created a big-time challenge as the healthcare facilities are not adequate in most of these countries, and are controlled by external factors other than the government. Iran alone has registered over 150 thousand cases and 7000 deaths.

Amid the global smouldering of COVID-19, there was a fear of a vital spread of the virus in Africa. However, so far, less than two percent of the total number of global cases have been reported from Africa that has around 17 percent of the global population.[15]

Almost all major countries in the world are facing the fatal challenge of COVID-19, with Italy and the US becoming the case studies for the experts for being the worst hit countries despite having cutting-edge technology and the healthcare system.

What went wrong in Italy?

Italy has registered the largest number of infected people after the US in the western region. With over 225 thousand registered cases of COVID-19 and a death toll of over 31,000, Italy has faced a brutal brunt from COVID-19 that will be remembered in the history of global affairs. The first case in Italy was reported on 30 January when the virus was found in two Chinese tourists visiting Italy.[16] By 21 February, 16 people were found to be Corona positive in Lombardy and Veneto. This was the time when the WHO was still insisting the virus was 'containable' and not nearly as infectious as the flu. Soon, the cases started increasing exponentially.[17]

Although Italy announced the first lockdown on 21 February, yet the virus kept spreading across the country. Epidemiologists believe that what went wrong in Italy is a matter of study and research for years, as the healthcare system of Italy is considered as one of the best in Europe. The situation became so critical in Italy, that the country was forced to ask the patients to stay in home care in part because of its low Intensive Care Unit (ICU) capacity. Due to COVID-19, Italy was left with 8.6 ICU beds per 1,00,000 people, below the average of 15.9 within the developed countries of the Organisation for Economic Cooperation and Development (OECD).[18]

Initially, Italy was confident about its well-equipped medical care system. Italy has 3.2 hospital beds per 1000 people (as compared with 2.8 in the US). However, when the situation went out of control, all non-critical surgeries were cancelled and operating rooms were turned into makeshift ICUs. With all beds occupied, corridors and

administrative areas too filled with patients, the preparedness eventually turned in to panic.[19]

There is another set of studies, that state that Italy has the most elderly population in Europe and the second most elderly population in the world after Japan. According to the analysis, the average age of people infected with COVID-19, who died in Italy, has been 80 years, and the average age of patients requiring critical care support has been 67 years. Additionally, Italy also has a high proportion of patients with heart diseases. Since COVID-19 mortality is strongly dependent on the age group and the presence of associated serious diseases, the researchers believe Italy had to face the worst effect of the outbreak.[20]

Some experts suggest that when the entire world started following social distancing and other precautions to check the spread of COVID-19, Dario Nardella, Mayor of Florence, Italy, initiated a 'Hug a Chinese' campaign on Twitter on 1 February. Following the mayor, many Italians posted their pictures hugging Chinese people. Although there has been no study that proves that this particular act was the reason for the rapid spread of coronavirus in Italy. However, the probability of such acts increasing the transmission rate cannot be denied.

After rounds of lockdown across the country, Italy has now started providing some relaxations. Apart from the health crisis across the country, Italy is also facing severe economic challenges due to COVID-19. To cope up with the situation and start rolling up its economy again, Italy's government has allowed the café, restaurants and other outlets to open. It would gradually open the travel, tourism and other economic avenues. However, this may prove to be a perilous step as still there is no treatment or vaccine available for COVID-19 and Coronavirus tends to reoccur.

Why US failed in containing COVID-19?

Amid the global toll of COVID-19, what is happening in the US is indeed shocking. With over 1.5 million cases and over 89,000 deaths, the US is another case study to understand why and how a "superpower" failed against a virus outbreak. This sounds more dreadful as the US has been working for years on preparing a comprehensive civil defence mechanism against the usage of biological agents or an outbreak. It has a strong normative framework, agencies, healthcare system, proficient workforce, very advanced technologies and most importantly, enough funds to invest in the required facilities to fight such outbreaks. However, the current situation in the US can be considered as an alarming bell for those who are working on preparing holistic and efficient responses against any biological agent outbreak. When the other countries like India were announcing total lockdowns, the US preferred to keep its economic interests above social health. The US kept itself engaged in a blame game with China instead of paying attention to its measures to contain the virus. Despite the increasing numbers of infected people, the country remained reluctant on announcing lockdown in the initial stage of COVID-19 spread. It seems it was overconfident about its healthcare preparedness and vaccine development program. Later on, when lockdowns were introduced in several states, both government and people did not support it wholeheartedly, which resulted in a failed response against COVID-19.

India's measures to contain COVID-19

India, despite having a huge population and limited resources comparatively, adopted

the lockdown way of containing COVID-19. After facing the initial hiccups and challenges, India could successfully create a comprehensive response against COVID-19. First of all, India announced a day's Junta Curfew or lockdown on 22 March 2020. After a supportive response from its system and the people, it then announced the first phase of nation-wide lockdown on 24 March 2020. Closure of all commercial and retail businesses, except for essential services like healthcare, sanitation, administrative, banks and security facilities, grocery and banks. The state borders were sealed, and the government banned all non-essential travel except in cases of inevitability. The government also announced the closure of schools and universities. However, the online mode of teaching and assessment was adopted. The country also observed the shutdown of all non-essential businesses and industries and followed under-surveillance quarantine of infected persons. This way, India delayed the spread period of virus so that it does not face a situation like Italy whose healthcare system failed due to devastating numbers of infected people at a time. It also provided enough time for the government to prepare against the dreadful outbreak with required measures, infrastructure and policies. This also created a well-planned awareness and preparedness in the masses without creating any panic. India is presently following the fourth stage of its total lockdown. Gradually the relaxations are being given, however under strict surveillance.

In its report based on data from 73 countries, the Oxford COVID-19 Government Response Tracker (OxCGRT), appreciated the Indian Government that has responded more stringently than other countries in managing COVID-19. It also acknowledged the Indian government's emergency policy making, instant

investment in healthcare, financial measures, investment in vaccine research and active response to the situation and India was given '100' for its strictness.[21]

Here an important question arises. Most of the developed countries with availability of enough funds, good infrastructure and advanced public and community health systems have failed in tackling the pandemic effectively. Generally, the availability of good infrastructure and advanced public and community health systems are considered as one of the most significant components for building a strong and holistic civil defence against biological agents or outbreaks. Then what went wrong? Here the scale of the outbreak and unavailability of accurate medication or vaccines against the virus played the most important role in causing the obliteration of a global scale. None of these countries were prepared for an outbreak of such a large scale.

Moreover, the human-to-human spread created another challenge as the medical staff too started getting infected. A country like China made make-shift arrangements for new hospitals overnight to occupy COVID-19 infected people. The US is also facing the same issue. This is the reason the countries that followed a complete lockdown could contain the virus more effectively as they could manage the scale of infection.

World Order Post COVID-19

It is very important to understand that COVID-19 is not going to vanish all of a sudden. It will exist and would again hit the world in its second wave, as predicted by many scientists. Hence, it is critical at this stage to be more vigilant and cautious with all measures in place to mitigate its infection. It is also significant to accept that the world has entered into a stage of acceptance where

biological outbreaks through the novel agents are no more a fallacy. Also, such novel agents may be used by terrorist organisations or the rogue states to disrupt the global system, challenge the international security and create a state of panic. At the same time, it is no more a secret for masses that such outbreaks, natural or deliberate, may disrupt their lives.

Although it is too early to comment on the future world order. However, scholars are continuously debating and deliberating about the shift in the power centers, upcoming challenges, regional and global alliances. The nature of the global system post COVID-19 would depend on the emerging leaders and countries based on their response to COVID-19. Experts believe that even in the era of globalisation, counties would prefer to keep their priorities at the top and hence COVID-19 would certainly change the world forever where multi-realities could be the new realities. Multilateralism would continue and may get more strengthened.

Going forward social distancing, face masks and virtual way of working could become the new normal. The power centers will shift too as the world is living in a shadow of the threat of economic slump due to COVID-19. Be the elements of conventional or hard power such as military capabilities and funding or the factors associated with soft power such as culture, diaspora and tourism, all have been impacted due to COVID-19. It would be interesting to see how countries would get over the associated challenges emerging due to COVID-19. COVID-19 is working as a catalyst for prevailing political, social and economic problems in different countries. It seems that many of the problems may reach their peaks during or post COVID-19 and hence would change the existing global system in both scenarios, if they get solved or they get worst.

Conclusion: What is needed?

Today, the world is facing a war without any missiles or guns. The enemy is right in front of us and not visible. A comprehensive civil defence is the need of the hour. A strong global mechanism is required to combat the plausible threat of usage of biological agents for outbreaks along with belligerent use of technology. However, at present, the most critical requirement to defeat COVID-19 is the right treatment and vaccine. Although many countries are working on it, so far, no verified medication or vaccine is available to treat COVID-19. Many countries have reported about the successful outcomes of using plasma of the recovered people to treat infected people, however, it cannot be considered as the exact treatment for the disease. On the other hand, the normative procedure for development, verification and production of a vaccine for COVID-19 needs to be expediated so that the containment and reoccurrence of the outbreak can be checked. One more significant point has to be considered here. The possibility of the use of more novel biological agents cannot be denied, and we cannot vaccinate ourselves every time for a novel agent. Hence, in terms of vaccination, a well-planned global vaccination strategy needs to be developed based on the advice of experts.

From a futuristic perspective, a strong normative framework for both, the tactical challenges as well as the strategic roadmap is needed keeping outbreaks like COVID-19 in mind. Usage of advanced technologies for developing easy and fast detection systems, promoting vaccination programs to develop broad-spectrum vaccines, mass production of Personal Protection Equipment (PPEs), creating general awareness in public so that they can learn to respond to such outbreaks without panic and most significantly, scientific collaborations are the key steps in solving this global issue. Also, when the issue

of dual use dilemma cannot be solved, the countries need to be transparent and cooperative in case of inspections and visits from International Organisations. This has been a challenge for Biological Weapon Convention (BWC) too and needs to be sorted to form a holistic bio-defence for all.

Collaboration and connectedness seem to be the most critical key for combating COVID-19 efficiently. First of all, countries need to form a web of networks from local to global levels either directly or through International Organisations. Sharing information immediately holds the most critical solution for COVID-19 like outbreaks. Imagine the impact if China would have shared the information related to COVID-19 immediately with the world and had quarantined itself? Then, preparing public and community health systems to act effectively is needed wherein underdeveloped and developing countries may be helped by other countries to prepare themselves for such outbreaks. Multi-spectrum vaccination programs also need to be discussed and run at a global level. COVID-19 opens a new world of challenges coming from the unseen and novel biological agents. Whatever the source be, the world needs to respond effectively and collectively based on scientific remedies. Bio-security and bio-defence seem to be and need to be 'the' priority for the world to ensure the existence of the human race.

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