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COVID-19 Pandemic: Calm before Storm

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Abstract: ***COVID-19 is emerging as a major public health threat leading to a global crisis that is unprecedented and extraordinary. There has been particular concern about the spread of the virus in countries that are already struggling with insecurity and weakened health systems.Nations were poorly prepared and the governments initially tried to cover the damage. Some countries have effectively managed the pandemic yet most, if not all, are struggling to cope the onslaught. Short-term and long-term strategies need to be drawn and implemented to stem the tide. Otherwise, not only nCoV infection will spell doom over the mankind but other viruses may be in the wait to attack the global community. Governments have a responsibility and must be responsive to the changing needs of blocking the viral super-highway. Act now or else we will be annihilated by emerging tiny microbes. It is everyone's responsibility. Our health is in our hands.This pandemic will not be the last. Nations must use this opportunity to rebuild systems into something more resilient.***

Keywords: Coronavirus, Pandemic, COVID-19, Global Crisis, Emergency Preparedness, Viral Superhighway

1. Introduction

The coronavirus pandemic is a crisis unlike any in the world during the last eighty years history.COVID-19 is a fast-evolving pandemic. The virus was quickly identified as a novel beta-coronavirus and the genetic sequence was shared on 12 January 2020. The infection is now officially termed COVID-19 and the virus SARS-CoV-2. The outbreak was declared a Public Health Emergency of International Concern on 30 January and a Pandemic on March 11, 2020. Within less than a month nCoV had spread throughout China and to neighbouring countries, the USA and Europe.

The new virus is highly transmissible from person to person but was considerably less virulent, with less than 20% of cases being classified as severe. As there are no specific treatment or vaccines available, standard public health measures appropriate for a virus spread by droplets, close contact and on environmental surfaces were instituted.

The Chinese authorities had by then instituted highly stringent control measuresin an effort to prevent mass travel, reducing movements within cities, minimizing mass gatherings, keeping schools closed, staggering office and factory working hours and restricting movement on the streets. The wearing of face masks became compulsory and, the population of Hubei province, over 50 million people, were in quarantine. The authorities also built two new hospitals with more than 2500 beds within 2 weeks to cope with the surge in demand for hospitalization.

By the middle of March, less than 3 months into the epidemic, there had been more than 200 000 cases confirmed worldwide with more than 8000 deaths, visibly surpassing the SARS epidemic.

Indian Scenario

The Center for Disease Dynamics, Economics & Policy (CDDEP), has come out with a report on Coronavirus in India. According to the report India is likely to see as many as between 12.5 crore to 24 crore of its people being infected with the deadly COVID-19 virus in the best and worst case scenarios respectively. In the best case scenario with decreased virulence, the peak will be around mid-June, 2020 where as in the worst case scenario where government interventions like rate of testing and social distancing fails, the worst peak phase will arrive at around April 25, 2020. The report further mentions that the hospitalised cases can reach up to 2,500,000 people in the high scenario, 1,800,000 people in medium scenario and 1,300,000 people in Low scenario. 'Ventilator demand will be 1 million. Current availability in India is estimated to be between 30,000 and 50,000 ventilators. Mortality in healthcare workers could further increase deaths in the general population. Healthcare workers need personal protective equipment (masks and gowns) to protect themselves. Delays in testing are seriously reducing the ability of the population to protect itself'.[1]

The study sees the effect of COVID-19 taper off August onwards. Internationally COVID-19 has seen well over a 10 per cent hospitalisation rate. In that case, India's health sector which provides for 1 hospital bed per 2000 people and less than 1,00,000 ICUs and ventilators nationwide could come under severe pressure. According to the report, current ICU- and ventilator-equipped bed capacity in India is wholly inadequate to the number of infections at epidemic peak. Current capacity is estimated at 30-50 thousand ventilators nationwide and about 70000-100000 ICU beds. India will need upwards of 700,000 and as many as one million ventilators to address the peak. An alternative may be to use tracheostomy and lower-cost ventilators. Supplementary oxygen is essential. Suction can be done using closed suction devices where infection control is better done without PPEs. Oxygen and non-invasive positive pressure ventilation (e.g CPAP) are needed. This capacity is inadequate outside of tier 1 metro hospitals.[1]

The study also suggests that a national lockdown is not productive and could cause serious economic damage, increase hunger and reduce the population resilience for handling the infection peak. State level lockdowns in the most affected states could change the trajectory of the epidemic and should commence immediately. Any delay

allows for more secondary cases to emerge. Lockdowns should be guided by testing and serological survey data and should be planned on a rolling basis.[1]

According to Girdhar Gyani, the convenor of the Task Force for COVID-19 hospitals, 'India has entered stage 3, which is community transmission, it is the beginning of this stage. Officially, we may not call it. It is the beginning of the 3rd stage'. Community transmission is the most critical stage during an outbreak and it is difficult to trace the original source. "We are running short of time in preparing COVID-19 hospitals as the outbreak in India can happen any day in coming weeks and we do not have enough trained medical staff and COVID-19 hospitals yet. The government is testing only those who have all three symptoms together, coughing, breathing problem and fever. If the patient is having only one of the symptoms then they will not be tested. We are running short of time in preparing COVID-19 hospitals as the outbreak in India can happen any day in coming weeks and we do not have enough trained medical staff and COVID-19 hospitals yet".[2]

2. Impact and Implications

COVID-19 pandemic is not only a medical emergency but also human tragedy. Without prompt and appropriate a action, the socio-economic effects could have wide implications for trade, travel, economic markets, supply chains and the daily lives of people living around the world.

COVID-19 is a major global human threat that has turned into a pandemic. This novel coronavirus has specifically high morbidity in the elderly and in comorbid populations. Measures of prevention, protection, screening, isolation and distribution have been shown to be efficient in similar settings. They are essential in the management of the pandemic and should be taken in the early stages of the disease.[3]

According to the World Trade Organization, the impact of the covid-19 pandemic on the global economy will be worse than the 2008 recession.[4]

Numbers released from the US Labour Department revealed that a record 3.3 million US citizens filed for unemployment in a week. Subsequently, the US Senate passed a stimulus bill of approximately $2 trillion.

The International Monetary Fund, has asked G20 leaders to support an increase of its emergency financing capacity to boost its response to the coronavirus pandemic.[5]

India has announced a total lockdown of its 1.3 billion citizens for 21 days. This comes after the WHO warned that the pandemic is accelerating. The government announced a 22 billion USD for people in urgent need of financial support to the millions of daily-wage earners in the country, after it went into lockdown.

The UN's food body has warned that protectionist measures brought in by national governments during the pandemic could lead to food shortages around the world.According to is Chief Economist, 'Coronavirus is affecting the labour force and the logistical problems are becoming very important. The most important role governments can play is to keep the food supply chain operating, intervene to ensure there are enough workers, and keep the global food markets from panicking. We need to have policies in place so the labour force can keep doing their job. Protect people too, but we need the labour force. Major countries have yet to implement these sorts of policies to ensure that food can keep moving. Special focus must be on impoverished and war-torn countries battling other infectious diseases'.[6]

Medical supplies are falling short globally. If there is a shortage of ventilators, how will doctors decide which covid-19 patients get one? This is the grim question health professionals around the world are currently grappling with.

In a pandemic, patient-centered care is inadequate and must be replaced by community-centered care. Solutions for Covid-19 are required for the entire population, not only for hospitals. The catastrophe unfolding in wealthy Lombardy could happen anywhere. Clinicians at a hospital at the epicenter call for a long-term plan for the next pandemic.[7]

There is a broad range of estimates of the number of ventilators we will need to care for U.S. patients with Covid-19, from several hundred thousand to as many as a million. The estimates vary depending on the number, speed, and severity of infections, of course, but even the availability of testing affects the number of ventilators needed: without adequate testing, the number increases because patients who are traditionally treated with noninvasive positive-pressure ventilation (NIPPV) for conditions such as chronic obstructive pulmonary disease exacerbations may need to instead be presumptively intubated while awaiting Covid-19 testing results. Current estimates of the number of ventilators in the United States range from 60,000 to 160,000, depending on whether those that have only partial functionality are included. The national strategic reserve of ventilators is small and far from sufficient for the projected gap. It is argued that there are not enough ventilators for patients with Covid-19 in the upcoming months.[8-11]

Rationing and prioritization issues are being discussed and debated keeping in view the ethical values — maximizing benefits, treating equally, promoting and rewarding instrumental value, and giving priority to the worst off — yield six specific recommendations for allocating medical resources in the Covid-19 pandemic: maximize benefits; prioritize health workers; do not allocate on a first-come, first-served basis; be responsive to evidence; recognize research participation; and apply the same principles to all Covid-19 and non–Covid-19 patients. Governments and policy makers must do all they can to prevent the scarcity of medical resources. If resources do become scarce, the six recommendations should be used to develop guidelines that can be applied fairly and consistently across cases. Guidelines should be provided at a higher level of authority, both to alleviate physician burden and to ensure equal treatment. The described recommendations could shape the development of these guidelines.[12]

Humanitarian crises

Although older people are the hardest hit, younger people are not spared. Data from many countries clearly show that people under 50 make up a significant proportion of patients requiring hospitalization. The impact of COVID-19 is felt by different groups in different ways. Everyone has a critical role to play to protect people with disability during the COVID-19.

Countries should test every suspected case of COVID-19. If people test positive, they should be isolated and the people they have been in close contact with up to 2 days before they developed symptoms should be sought out, and those people should be tested too if they show symptoms of COVID-19. WHO also advises that all confirmed cases, even mild cases, should be isolated in health facilities, to prevent transmission and provide adequate care.

Many countries have already exceeded their capacity to care for mild cases in dedicated health facilities. Countries should prioritize older patients and those with underlying conditions. .

WHO is providing guidance to help people manage fear, stigma and discrimination during COVID-19. The rule of the game is: never give up.

All countries must aim to stop transmission and prevent the spread of COVID-19, sporadic cases, clusters or community transmission.Every country should urgently take all necessary measures to slow further spread and to protect health systems from becoming overwhelmed with patients seriously ill. The spread of this virus can be significantly slowed or even reversed through the implementation of robust containment and control activities.Every effort should be made to contain the virus and slow the spread saves lives. Every person has the capacity to contribute, to protect themselves, to protect others. The COVID-19 epidemic "can be pushed back, but only with a collective coordinated and comprehensive approach that engages the entire machinery of government.

Delay in Immunization Programme

According to UNICEF, COVId-19 pandemic is forcing parents to skip kids' vaccinations: billions of people across the globe to stay home is making parents skip routine immunisations for their kids. The phenomenon is being aggravated by overburdened health services where medical workers are being diverted from giving vaccines to focus on the COVID-19 response. Some governments might even have to postpone mass immunisation campaigns as a way of slowing the disease's spread.At a time like this, these countries can ill-afford to face additional outbreaks of vaccine-preventable diseases.UNICEF recommended governments begin rigorous planning now to boost immunisation campaigns once the coronavirus is under control. There is a risk that more people will die due to the indirect impact of COVID-19, because vaccination will go down. There will surely be more measles deaths.

Responding to the Challenge

More than a century years ago, a global pandemic affected over 500 million people worldwide. The 1918 influenza pandemic affected one-third of the world's population and resulted in fifty million deaths.Today, COVID19 is a major humanitarian and public health crisis of mammoth proportions that needs a strategic (long-term) planning as well as quick and adequate immediate response.

Sanctions against some countries need to be lifted on humanitarian grounds to enable them to respond to this humanitarian crisis. This is a Clarion call.

Attention of world community towards most vulnerable population like urban poor, migrant laborers, daily-wagers, refugees, dislocated persons, and war-torn countries is critical. Prisoners must be temporarily released. People living below the poverty line, the disadvantaged and those living in Urban Slums have to be attended.

Science and technology today as part of an inquiry into the response to the pandemic. Research can save lives and needs to be integrated into the response from the start.

For something so small, viruses have a huge impact on the world. They are the most abundant organisms on Earth, and probably played a pivotal role in the origin of life. A combination of physical distancing interventions, including quarantine for infected individuals and their families, school closures, and workplace distancing is most effective at reducing the number of coronavirus cases.
Real-time training during global emergencies is critical for effective preparedness and response.

No pharmaceutical products have yet been shown to be safe and effective for the treatment of COVID-19. However, a number of medicines have been suggested as potential investigational therapies, many of which are now being or will soon be studied in clinical trials, including the SOLIDARITY trial co-sponsored by WHO and participating countries.

Research on developing vaccine

Coronavirus vaccine trials get underway. Researchers at the University of Oxford in the UK are planning a safety trial for a vaccine against coronavirus in humans. Normally vaccines are tested in animals first, but the trial has been accelerated due to the speed of the coronavirus outbreak.The first human trial of a vaccine to protect against the covid-19 coronavirus began in the US earlier this week. Other vaccines are in development in Germany and China. Development of an antibody test will also be important to confirm whether people have acquired immunity to the coronavirus. Some viruses have their own enzymes to synthesize the matching mRNA from scratch; influenza does not, and instead steals a "cap" from the host-cell mRNA as a primer. If scientists can stop this mechanism from working, the virus can be stopped from replicating.

The nCoV is going to stay for some time. The way to get on top of the covid-19 outbreak is through rapid testing, isolation and quarantine rather than lockdowns and big travel restrictions.

Countries are facing shortage of human resource and medical supplies. Shortage hospitals, wards, beds, ICUs,

Ventilators. PPE, etc is a serious challenge facing various countries. Diagnostic, therapeutic, and preventive interventions will also be scarce.

Governments around the world are responding to the covid-19 pandemic and social distancing is a central aspect of plans to limit the spread of the coronavirus. Effective quarantine is essential for tackling the coronavirus, but this cannot happen without extensive testing.

A combination of actions by governments including more testing and contact tracing could save lives. Testing and contact tracing, combined with social distancing measures and community mobilisation, when put in place quickly and effectively, can prevent infections and can save lives.

The virus could be beaten back by solidarity within communities and between countries. Lessons must be learnt from China, South Korea, Singapore and Taiwan who put effective and robust mechanisms in place to halt the spread of COVID-19.

In its battle against the pandemic, the step it is taking could make doctor shortage a non-issue in coronavirus battle. The move, currently under discussion at the highest level, is important because it can plug the shortage of specialists. A shortage of doctors looks like a clear possibility given a highly likely surge of cases in the weeks to come.India is the only country in the world which, just by changing MCI regulations, can produce over 15,00,000 doctors and specialists out of thin air which is considered the greatest ammunition against the COVID-19 pandemic.[13]

Every country must have the capacity to face infectious disease outbreaks. Maximumhandling capacity of health facilities is under severe threat. The US and UK Governments have provided among the world's weak responses to the pandemic. China, South Korea, Singapore, and Taiwan, have provided rapid, effective, and often innovative responses.

Society has a duty to exercise solidarity and better protect older people who are bearing the lion's share of the pandemic. Senior citizens feel loneliness and stress.Social media can be used to disseminate credible and authentic information about symptoms, hand hygiene, social distancing, quarantine, when to get tested, what to do with the results, and where to receive care. Scientists and researchers should put their heads together to develop innovative testing facilities like Ultra-sensitive assays that capture very low levels of viral proteins and enable rapid point-of-care testing and Antibody-based testing that identifies individuals who have recovered from infections with the new coronavirus and have developed immunity to the pathogen.

Looking Ahead

Within next decade or so, the world will develop on-demand vaccines and treatments for a number of categories of viruses. Structural biology has reached the stage where it's fast enough for almost anything. The capability for rapid sequencing of viral genomes already exists. It will become more widespread, helping discovery and diagnostic testing. Advances in computer technology and synthetic biology have revolutionized both detection and diagnosis of pathogens, as well as the processes of design and development of vaccines. It will be possible to put together anti-virus molecules that can be used to make vaccines, or to treat infections. Human ingenuity will limit the success of mircobes to small outbreaks that will be quickly contained.

The world will learn from the successes and failures of national responses to the current pandemic. Expect greater international coordination, norms and processes in public health.

Today, disease travels fast. Faced with more populous cities, more mobile people and more international travel, scientists must respond to the threat of viral pandemics faster than ever.

The coronavirus COVID-19 pandemic is the defining global health crisis of our time. Countries are racing to slow the spread of the disease by testing and treating patients, carrying out contact tracing, limiting travel, quarantining citizens, and cancelling large gatherings such as sporting events, concerts, and schools.The pandemic is moving faster than the capacity of countries to halt its spread.

COVID-19 is much more than a health crisis. It has the potential to create devastating social, economic and political crises that will leave deep scars.

Every country needs to act immediately to prepare, respond, and recoverwith a focus on the most vulnerable.It will require all of society to limit the spread of COVID-19 and to cushion the potentially devastating impact it may have on vulnerable people and economies.A global response now is an investment in our future.[14]The strategy for managing the pandemic has to shift from containment to mitigation.

3. Conclusion

Containment through case finding and isolation and contact tracing and social distancing remain the key public health approaches to controlling the epidemic in all parts of the world. There is still a need to scale up support to frontline health workers, ensure additional manufacturing capability and reinforce the existing supply chain for PPE and other critical medical supplies. There is an urgent need to develop point-of-care diagnostics, optimizing PPE and determining the utility of facemasks; identification of the animal reservoir to prevent further spill-over; accelerating the evaluation of therapeutics, and vaccines, which may prove vital in the longer term. The threat posed by COVID-19 has cast a spotlight on the shortcomings of health systems. Preparedness to respond to outbreaks is weak in many countries. Countries must invest in emergency preparedness and health.Let the global community turn current weaknesses into strengths and threats into opportunities. Let us all rise to the responsibilities of challenge of change.

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