Preparing for A Post-Corona World
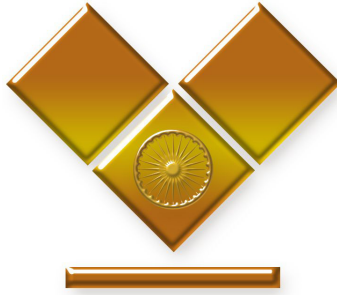
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Abstract

The Novel Corona virus has not only taken over the year 2020, it will have ramifications for decades to come. Changes to societal norms and developmental priorities, and de-globalisation forces gaining momentum are just some of the expected uncertainties on the anvil. This paper explores a myriad of effects and issues related to this history-changing moment in our times. It discusses some human development aspects that will be hit adversely, the central role of China in this 'Black Swan' event, impact on economies and a future scenario, the way-ahead including technology and community-based capability building, and role of Indian Armed Forces. It is also an opportunity for decisive change for a more self-reliant, egalitarian and resilient India.

Introduction

One hundred years ago (1918), an influenza pandemic killed between 50-90 million people across the world. It was reportedly quite common that a person becoming ill in the morning could be dead by bed-time.[1] The Severe Acute Respiratory Syndrome (SARS) in 2003 eventually killed 774 people in 26 countries across five continents. In 2009, the H1N1 (Swine Flu) infected two billion people in six months. More than 11,000 fatalities and 30,000 infections occurred across ten countries during the 2013-2016 West African Ebola outbreaks. [2] Currently, the world's attention is riveted on the 'Wuhan Corona' spread. How it will impact the future despite a coordinated and robust response by the world is still anybody's guess. But the damage and ramifications to people, politics, economies and globalisation are difficult to comprehend.

Infectious disease outbreaks and spread of antimicrobial resistant diseases, some with no vaccination or prevention options, are inevitably tied to rapidly increasing populations, poverty, dietary changes of people in emerging economies, poor antibiotic use and a narrowing human-animal interface. These diseases could potentially result in millions of fatalities and astronomical costs, and have many other significant consequences in social, security, and political sectors. More so in an interconnected and interdependent globalised world.[3] The huge advances in technology and ability of people and resources to move around the world has promoted unprecedented economic prosperity, but also created new and unique challenges for pandemic preparedness and response. It is now very much a core national security concern. Additionally, it is a shared burden of

vulnerability among most nations engaged in trade and commerce, and therefore, the need for a globally synchronised and coordinated effort.

A Human Issue

Human health cross-cuts all global frameworks addressing sustainable growth of the world. The Sendai Framework for Disaster Risk Reduction or SFDRR explicitly includes epidemics and pandemics among biological hazards. Sustainable Development Goals (SDG 3) are devoted to "good health and well-being", with an emphasis on "early warning, risk reduction and management of national and global health risks".[4] Also, the Paris Agreement and the Intergovernmental Panel on Climate Change Assessment Report highlights that climate change exacerbates health risks including pandemics.[5] There is clearly a broad intersection of health and disaster risk management, comprising, among others, such areas as emergency and disaster medicine, improved health systems and resilience, disaster risk reduction, humanitarian response, and community health resilience.

The Sendai Framework takes an interconnected and collaborative approach to understanding risk (UNDRR, 2019). The nature of current risks is complex and systemic, and is transforming to compound, interconnected, infracting and cascading. Like the combined effects of the triple disasters of earthquake, tsunami and nuclear power plant failure in Japan in 2011, there are numerous places where it can turn into 'wicked' problems e.g. Syria.

The economic fall-out from COVID-19 is going to be astronomical that will easily exceed the 2008–2009 Financial Crash. The direct costs of COVID-19 in terms of travel bans, social distancing, loss of jobs and opportunities and other aspects are merely some of its facets. Uncertainty, panic, uninformed herd mentality and such human biases can create long-term debilitating effects on capital markets, flows and ease of doing business across the world. Longer-term precautions that are imperative to avoid subsequent waves, including screening, isolation of suspected cases and social distancing, will protract the global recession already underway. Sectors such as aviation, energy, and hotels which are going to be badly hit will require massive interventions of national governments. The social and psychological fall-out on humanity, especially its vulnerable segments, is a scary scenario.

Was it Predictable?

Urban Outbreak 2019 was an analytic war game by US Naval War College to game all factors in responding to a pandemic. In the scenario-building exercise, the original pathogen proposed was remarkably same as the COVID-19 virus. It was rejected for a lesser variant of a known and curable pathogen. Like the proverbial ostrich, we like to hear and deal only with the 'knowns' and stay in our comfort zones. What is happening today could have been visualised, and appropriate leaders sensitised well in time. More importantly, observations from such exercises are verified as events have unfolded.

Firstly, that early planning and actions across are far more important than reactive measures once the disease is widespread. It is important for some key authorities and organisations to take the lead early however, the number of stakeholders who are in high demand will increase and diversify as events unfold. Secondly, a primary response must also focus on all the ways to lower the R "naught" or R0 (the average number of people infected by each new person infected). This allows regular identification of common high-risk practices that raise the R0 and subsequently implement suitable alternatives. Thirdly, data must drive actions, but its integrity must be questioned rigorously throughout the process. Information and facts on the ground inherently lag a few weeks behind infections; and without real-time and widespread testing, mortality-doubling rates offers a tangible option to assess what is probably happening. Healthcare workers and first responders often provide the best realistic assessments.

Fourthly, local media relationships for risk communication must be in place early before the outbreak intensifies. Other measures to effectively combat misinformation and rumours must be undertaken including credible and believable voices. Fifthly, in a whole-of-nation approach, the private sectors are an absolutely essential and responsive part of any large-scale response, and therefore require to be integrated early in the planning. Finally, societal change issues require close monitoring and appropriate interventions e.g. clear, fast and repetitive messaging. For example, stigmatising of those infected will hamper transparency and honesty, and will only compound the problem.

Chinese Virus?

It is most widely believed that the root cause of the Coronavirus pandemic is the Chinese government's emphatic and repeated insistence that human-to-human transmission was not possible and that things were under control, even after Wuhan doctors had discovered human transmissions. Unfortunately, this lie was backed by the World Health Organization for a long time and till too late.

It is estimated that the Coronavirus jumped from an animal species (probably smuggled pangolins - a medicinal delicacy in China) to humans in one of the numerous wet markets somewhere in the last quarter of 2019. According to the much recognised journal '*The Lancet*', the first documented patient was on 1st Dec 2019, and his wife, with no exposure to wet markets, followed five days later. By mid-Dec, doctors in Wuhan began noticing clusters of cases and medical staff being infected. By late-Dec, an exponential rise in cases not linked to the local wet market, suggested strong evidence of human-to-human transmission. This is documented in a study in *New England Journal of Medicine.* And in line with this, the late Dr. Li Wenliang's famous message on 30th Dec, and ramifications thereafter are now well documented. He had very clearly warned other medicos to protect themselves from a possible outbreak of an illness that resembled severe acute respiratory syndrome (SARS) - clearly recognising human to human transmissions.[6]

There is also evidence (some erased by Chinese Govt) that even when it was 'mildly' reported to WHO, the government quietly ordered a genomics company to stop testing samples from Wuhan related to the new disease and destroy all existing samples. This

further delayed the all-important message to the world of human transmission. At this time according to New York Times, 175,000 people left Wuhan for all over the world by thousands of direct and connecting flights. Even on 3rd January 2020, the Wuhan Municipal Health Commission repeated that no clear evidence of human-to-human transmission and no medical staff infections had been observed, setting the stage for further complacency across the world. The Chinese Govt only allowed a WHO team to visit in mid-Feb after attempting to whitewash all evidence of a cover-up.[7]

Very tellingly, WHO issued a statement on 8th Jan that complimented China for identifying and genome-sequencing the virus, and stated that *there is no evidence that the new virus is readily spread by humans, which would make it particularly dangerous, and it has not been tied to any deaths*. Therefore, WHO did not recommend any specific measures for travellers, and more importantly, any travel or trade restrictions on China. Wuhan City Health Commission's statement on 11th Jan reiterated no new cases detected and no human-to-human transmission.

Even on 14th Jan, Wuhan Authorities in an official statement on their website claimed no transmission among close contacts of infected. They linked all cases to the local wet market, now identified as a famous local sea food market. While the Chinese indulged in a cover-up WHO and rest of the world continued in a denial-mode; mainly for fear of economic ramifications. WHO 'believed' and supported this even after six weeks of the first evidence of human-to-human transmission in Wuhan being highlighted by local doctors. By this time other countries started reporting cases across East Asia. It was only around 22nd Jan that the human transmission

truth was accepted by WHO and China. Already, millions had left Wuhan carrying the virus all around China and the world.

China's lack of transparency and direct role in suppression of the truth will have a great impact on future relationship with big and medium powers of the world. Hiding the level of spread within China, concealing human transmission facts and manipulating the World Health Organization, are just some of the negative perceptions that will stay on for a long time. WHO Director General Tedros Adhanom Ghebreyesus publically, praised China's transparency despite adequate proof of cover-up and silencing of whistle blowers was appointed in 2017 with China's backing. China is Ethiopia's largest foreign investor and it plans to build a new headquarters for the African Centre for Disease Control and Prevention in Addis Ababa. Incidentally, Ghebreyesus is an ex-Health Minister of Ethiopia. Quite clearly, suspect Chinese data on Covid-19, like its faulty medical equipment supplied to Europe, should not be used to model responses. China successfully ensured that WHO focussed only on the positive aspects of China's responses and ignored all facts and evidence, and questions on authenticity.

As of now the theory of a Chinese involvement of Biological Warfare has been discounted. But it is worthwhile to consider some issues involved. This kind of warfare with manipulated pathogens promises a victory without fighting or spilling any blood. China, like Russia and other western powers, has invested covertly or overtly on this promise. Like others, it has ordered the execution of a National Gene Bank in 2016 which aims to map national genetic resources, safeguard national security in bioinformatics, and enhance capabilities to gain a decisive advantage in this strategic

field. It aligns with its declared asymmetric approaches to ascend to the top status among superpowers. Its reputation of secretive programs and non-transparency was evident in the SARS Episode in November 2002 and discovery of smuggled stored viruses from Canada's National Microbiology Laboratory (NML) in Wuhan in March 2019. The two Chinese expelled operatives from Canada who were involved had links to Chinese biological programs earlier.[8]

China is proactively attempting to shape international perception in shifting from a blame-China narrative to one based on success of a decisive and in-control regime working for the good of mankind.[9] It is an opportune moment when fortuitously attention has been diverted from democracy protests in Hong Kong, detention camps of Uyghurs and an economic downturn.

Flickers of dissent and indignation especially on social media are discernible. Dr Li Wenliang died from COVID-19, but not before texting to the world, "..more openness and transparency, the situation could have been better." Reports of social media anger in China picked up as attempts to hide facts by authorities emerged. A widely circulated video on Chinese social media showed people of a high-rise apartment building shouting, "Fake! Fake! Everything is fake!" as a senior functionary inspected the area. A business property tycoon was reported as missing after he alleged that limits on free speech had exacerbated the epidemic. The information control sequence was predictable: suppression of information; next, play up govt achievements and record-breaking efforts; followed by allowing calibrated critique; and, finally invoking nationalism by diverting blame to the USA. Countries funded by China on the BRI plank such as Ethiopia, Serbia, Pakistan and Italy were nudged to make

appreciable noises for legitimacy.[10] Most African nations have been promised help of critical medical equipment such as testing kits, masks and protective suits.

This manipulation of the global narrative is supported by provision of medical equipment like ventilators, masks, and virus test kits to countries hit hard by Covid-19, and eliciting praise in return from leaders of Serbia, and regimes it supports in Africa and Latin America. The Chinese model of decisiveness, control of information and institutions, and an overall authoritative approach is being offered as an alternative to bumbling democracies.[11] Ironically, it this very authoritarianism without accountability that makes them indulge in suppressing the truth, manipulation of information and the dysfunction that caused Covid-19 to assume gigantic proportions. As evidenced today, the ramifications in a connected world are mind-boggling and may change how the world interacts.

A Systemic Problem

Since Xi Jinping coming to power, there has been a more impatient and aggressive transformation to China's quest for heading the world. In 2018, he abolished limits to presidential terms, carried out heavy-handed purges of other potential contenders, used an anti-corruption drive to win popular support as well as get rid of thorns in his sides, and has taken many other power-consolidation measures. He has drastically centralized economic and political decision-making, allowing him an unchallenged manipulation of state-owned enterprises with government resources. For example, 5G and Huawei have allowed active surveillance and tracking of the population in Xinxiang. But such centralisation leads to rigidity

with lag in correct actions - what happened in Wuhan may be a case in point.

The US' trade squeeze to economically decouple from China in order to constrain its growth had already been set in motion. This strategy will not change with any change in US leadership. This could add to Xi's woes of domestic economic slowdown, increasing debt burden, decreasing investment-driven manufacturing, and cause uncertainty in mega-programs e.g. Belt and Road Initiative (BRI).[12] The biggest pillar of support of the CCP is unbridled growth and prosperity of its huge middle class; and that may not be sustainable with active opposition from the West. While nationalism and anti-US agendas can help, but only up to a point. Protests in Hong Kong could be an indication of times to come in other provinces despite the most invasive and ruthless surveillance and monitoring methods at hand. CCP's power sharing structure encompasses elaborate granting of favours and projects to the elite, which may get affected with dwindling finances. This could be another fault line.[13]

A New World

As per Arvind Gupta of Vivekananda International Foundation, "the Covid-19 crisis is an opportunity to rethink about rebuilding and reshaping the economy."[14] It is increasingly clear that India will have a greater role to play in the world in a post-Corona world. It would depend on how well it handles the Covid-19 crisis domestically, and more importantly, what lessons it imbibes of resilience-building and self-reliance. A new round of a 'Swadeshi movement' may be around the horizon that is underlined by egalitarianism, rural upliftment and urban resilience - in a nutshell, a unique but contextual Indian

template. It is important to look at the world's response to the crisis, India's own strength and weaknesses, and some crystal gauzing in to the future.

Europe's Lazy Response

It was the dire Italian situation encompassing issues of exponential growth of infection, case fatality rates and ICU capacity or the lack of it that woke the world up to the damaging potential of this 'influenza-like' virus. Along with that came horror stories of triage of the weak and elderly, of piled up of corpses waiting in absence of cremation capacities, of crying doctors and nurses completely exhausted, and of elderly people dying alone without last rites or a final goodbyes to their loved ones; all unbelievable in evolved countries that take pride in their value of each human life.

For example, Britain's initial confused strategy incorporating 'herd immunisation' took an about turn after the publishing of a report by the Imperial College COVID-19 Response Team in March. This modelled a scenario of the virus being allowed to spread unchecked, and indicated that the capacity of ICU beds in the UK be exceeded 30 times over, and half a million people dying. Even with mitigation schemes in place in the initial UK strategy (herd immunisation), hospital capacity would still be exceeded by eight times and an estimated 250,000 people would die. It was enough to make the Brits change and do what Europe was doing.[15] Modelling could have errors, but after Italy and Spain the world was convinced that over-reaction was a far better option.

The European Commission was flexible enough to allow deficit spending, imposition of border controls overturning the Schengen system temporarily, collaboration on medical issues and equipment, and importantly, along with the European Central Bank endeavouring to ensure solidarity of Europe. This is an upheaval of gigantic proportions and will test existing geopolitical templates. The recent softness towards China and the attractiveness of its Belt & Road initiative, coupled with an 'America First' by Trump, may undergo massive transformation post-Coronavirus.

Economic Impact

The immediate economic impact of Covid-19 is shrinking of economies and slowdown of growth, with attendant collapse in trade flows. In a world obsessed with inter-dependence and global mobility of goods and people, countries are contemplating steps to reduce these in an effort to increase resilience. Only a perfect pandemic could have exposed such underlying schisms that are forcing nations to recalibrate the risks of globalisation. Quite clearly, some of the issues in a post-Covid-19 world would encompass primacy of medical and health supply chain resilience, greater self-reliance in the medical sector, health as a focus area of human security, and a whole gamut of testing, approvals and regulation of medical products. However, nationalising supply chains may be a costly and inefficient task. Some countries have suggested that WHO create and curate a voluntary pool of patent rights, regulatory test data, and information that could be shared for developing drugs, vaccines, and diagnostics. This will ensure availability to the poor majority of the world.

Since the 1980s, World Trade Organization (WTO) has accelerated globalization, with added impetus from the revolution in information technology. Boundaries quickly disappeared for movement of not only resources and products, but also for ideas, knowledge, people, and cultures. The world changed and transformed in new order of trading e.g. people in emerging markets became consumers and producers at the same time, technology and sophistication redefined production methods, and trade in services became more rewarding than in goods. The only serious hiccup came with the 2008 financial crisis, when international trade slowed down exposing hidden risks and fault-lines. The processes for de-globalisation were underway, but covert. Could Covid-19 be a body-blow?

The pandemic could fundamentally change the patterns of global migration with serious longer-term implications. While high-end professionals such as doctors and engineers may not be too affected, lower-paid migrant workers would face a barrage of challenges. This could include tighter controls on medical screening, immigration, trips to home, more quarantining camps, stay and mobility permits from camps/ghettos, more invasive surveillance through mobiles and other gadgets etc. The urge to hire cheaper labour would have to be balanced by these additional costs and hassles. This squeeze on migrant labour would have cascading effects on countries that depend on remittances, as well as a crippling effect on marginalised populations that depend on this for livelihood. The one advantage of WTO for the developing world i.e. free movement of people would be severely crippled. Additionally, growth of right-wing views demanding more protection for local workers will empower politicians with narrower world-views. The worst downside is

increased human trafficking of extremely vulnerable people from poor or destabilised pockets of the world.

Many experts and epidemiologists predict that the arrival of the next pandemic is merely a matter of time. High transmissibility, long incubation time, asymptomatic spread, and high mortality could be even more dangerous in the next pandemic. There will be many lessons learnt post-Coronavirus, but how much countries will invest in an 'invisible' threat in terms of money, capability-building, protocols and other issues is still unclear. The final costs on citizens are too high to be ignored.

The Corona Crisis is severely testing US' leadership, and putting a question on its future trajectory as a foremost superpower. Its dithering on decisive counters to Covid-19 are viewed in some quarters, and actively projected by Chinese propaganda, as a weakness of democratic politics. With a nominal GDP of 21.4 trillion dollars, it still far outstrips its nearest competitor China ($7 trillion). The very late held G-20 meeting did not promise any real coherent collective response except injecting $5 trillion through targeted fiscal policies in to the world economy.[i] But in this crisis, at least presently, China has stolen a march by providing medical supplies and experts to about 90 nations. The US Govt has allocated only $1billion for spending on other countries from its $2 trillion stimulus fund.[ii] But this could be just a Chinese blip which might lead to a 'larger' collaboration between the US and India or even

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i   https://www.france24.com/en/20200326-we-will-overcome-coronavi-rus-crisis-vow-g20-leaders-after-video-meeting

ii   https://www.theguardian.com/world/2020/mar/29/us-awol-from-world-stage-as-china-tries-on-global-leadership-for-size

among the Indo-Pacific grouping. Anti-China sentiments and public anger could pressure leaders to move to a 'new world'. The huge economic and human costs in India will ensure negative public perception for times to come and impact national debates on Sino-Indian ties too.

The Way-Ahead

Researchers do know that re-infection is an issue with such corona viruses. After infection with any of the four known seasonal corona viruses, antibodies are produced but levels slowly decline and people become susceptible again - so any protection is limited and relative. Then there is the issue of mutation that viruses go through in order to survive. The key is in understanding the human immune response to this virus for vaccine development.

Many sceptics still invoke the fact that the common flu kills more annually, without taking into account the 'novelty' factor of Covid-19 and the complete absence of immunity from it in the general population. Experts even invoke the dire economic consequences and resultant deaths, especially for the marginalised world below the poverty line. Some claim the world is suffering from "corona hype", a panic that will produce cures worse than the disease. Citing low mortality rates of Singapore and South Korea is wrong. East Asia, after going through SARS, H1N1 and others, is far better prepared with protocols and SOPs to handle epidemics. It is clear that mortality rate is not an intrinsic trait of the virus, but a function of context, preparedness and circumstances.

Eventually, populations could reach herd immunity, where a high enough percentage of the population is immune to the virus, and it peters out. It is still unclear whether Covid-19 transmission will slow in summer temperatures. Mutation in response to effective therapeutics is another long-term worry.[16] Social distancing measures implemented with aggressiveness slow the spread, buying time to stock hospitals with supplies, PPEs, trained personnel, ventilators, and other such measures to prevent medical services from becoming overwhelmed. This would result in flattening the curve and extending the timeline for the outbreak. At the same time, other critical actions need to be taken in parallel e.g. early and highly aggressive testing, contact tracing, isolation, and quarantine. Anti-bodies testing (Serological) is a critical tool for immunity certification system that will allow the economy to restart. This has to be based on a capable digital disease surveillance system that can track testing and serological data across the country. But ultimately, a safe and effective vaccine is the only intervention that can definitively control the pandemic. Most importantly, an economic safety net for the poor and marginalised must underwrite all these measures.[17]

Technology Helps

Big Data Analytics can process large volumes of data to offer insights and knowledge about diseases and predict hotspots to enable informed decisions for response activities.[18] For example, a Canadian start-up BlueDot was among the first in the world to identify the emerging risk from Covid-19. Its systems merged artificial intelligence (AI) tools with expert epidemiologists for

evidence of emerging diseases based on multiple datasets of disease mobility and outbreak potential. Google's *DeepMind* used state-of-the-art AI algorithms and mega computing power to build the protein structure of Covid-19 for open use to develop vaccines. China has developed a health-monitoring system that identifies and accesses the risk of each person on the basis of their travel history, potential exposure to infected individuals and the time spent in virus hotspots.[19]

An Artificial Intelligence (AI) tool has accurately predicted which patients, newly infected with the Covid-19 virus, would go on to develop severe respiratory disease[iii]. The team working on this aimed for a decision-support tool using AI capabilities as predictive analytics to flag future clinical corona virus severity. The researchers were found that characteristics associated with Covid-19, like certain patterns seen in lung images, fever, strong immune responses, age and gender were not useful in predicting which of the many patients with initial, mild symptoms would go to develop severe lung disease. The new AI tool found that changes in three features – levels of the liver enzyme alanine aminotransferase (ALT), reported myalgia, and haemoglobin levels – were most accurately predictive of subsequent Acute Respiratory Distress Syndrome with up to 80 per cent accuracy.

Israeli field units of major hospitals are using telemedicine technologies to provide remote patient monitoring from a centralised command and control facilities in anticipation of a surge

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iii   The Statesman,31 March 2020; https://www.thestatesman.com/technol-ogy/artificial-intelligence-ai-tool-predicts-which-coronavirus-patients-develop-respiratory-disease-1502871930.html

in intensive care unit (ICU) admissions. AI and machine learning models will enable ICU workers to proactively identify respiratory deterioration in advance, and manage disease severity and workload.

AI algorithms have successfully mined news reports and online content from around the world to recognise emerging hotspots. Flight traveller data was able to model and predict where the virus could spread next. Big data analytics can help de-centralise the process and enable the timely analysis of widespread data sets generated through Internet of Things (IoT) and mobile devices in real-time.

Non-contact measures like robotics are promising, e.g. Spain plans to automate tests through robots that would execute 80,000 tests per day, since about 12% of the affected are health workers. An Israeli start-up aims to provide health care workers with face masks and coats made from anti-bacterial and anti-pathogen fabric that rely on metal-oxide nano-particles. Drone delivery can ensure fast and continuous non-contact delivery of medicines, blood-samples and other critical items.

Indian Armed Forces and National Disaster Response Force (NDRF) possess Nuclear Biological Chemical (NBC) capabilities, which can be used in a crisis of equipment shortage. For example, the French 'Battelle Critical Care Decontamination System' can clean nearly 80,000 units of personal protective equipment at a time. It is mobile, transportable and in 12 hours can circulate items back to hospitals. Countries are improvising ventilators in every imaginative way possible e.g. modifying for multiple use at a time, using car engines, large industries shifting radically to produce

make-do ventilators, trains converted into mobile isolation modules and ICUs, and so on. Ideas for mass decontamination are coming up and being implemented all over India. Companies with expertise and wherewithal in Data Analytics and Artificial Intelligence can help handling huge amounts of data as the crisis unfolds, to explore better strategies or modifying existing ones. The proverbial Indian 'Jugad' has to rise to the occasion.

Three lines of treatment are being explored and researched on a war-footing across the world: anti-viral, used for diseases such as HIV and Ebola that try to stop the virus from replicating; antibodies, developed from those made by patients with the disease and given to boost the immune system; and anti-inflammatory, used for controlling the immune system from going into overdrive and affecting breathing.[20] India as the world's biggest producer of Hydroxy-Chloroquine is being sought out to deliver it across as a line of treatment in severe cases and to save medics working on COVID-19 cases.

A Community Problem

Just as in major disasters, the first response is effectively by the local community, institutions and players. Community-based health workers, civil society organisations, veterinarians, teachers, religious leaders and traditional health practitioners are keys to early detection and containment.[21] This will trigger an early action of mobilising national resources. Training, awareness and knowledge will help the community to start actions in right earnest to save lives and help geographical expansion. Unfortunately, international response to epidemics and other health emergencies is mostly active during an

outbreak and not in the breaks where actual preparedness should peak. This factor again prioritises developing strong community-based primary healthcare systems as first-responders. And again, just as an all-hazard approach in disaster-management, the focus of preparedness must be on all-hazard external health threats. All local programs must be aligned to national and international plans, norms, protocols, and such other issues.[22]

'Community' covers people, institutions, structures, and social practices shared by a group at a sub-national levels e.g. state, district, block, taluk, village etc. A whole-of-community also includes all public, civil society, NGOs, religious organisations, schools, media, private and corporate actors, and other formal institutions. These stakeholders detect and report any new disease symptoms and are critical to establishing and maintaining communication between the various levels of the healthcare system and an affected community during an epidemic, and are critical in the initial containment and running of community's primary healthcare functions during the early stages. Each region or community will have specific hazard-exposure profile and vulnerabilities that may combine to increase or decrease its risks. Larger National and State plans must incorporate these in the response protocols and SOPs. Mapping of local vulnerabilities, resources, role-allocation, and simulated practices is a first-step to be taken. This would also account for availability or lack of adequate infrastructure, trained personnel and other response capacities. In short, local empowerment with accountability is the way forward, along with adequate funding in the non-crisis period.[23]

How do we build resiliency in communities? Disease outbreaks seriously disrupt the functioning of a community with grave and

sometimes crippling implications on all facets of living. Resiliency is about bouncing back by virtue of being well prepared, adaptive to emergent complexity, possessing good situational awareness and robust mind-sets among community responders. Public trust is critical, and this cannot be built up only during a crisis. Transparency, constant engagement and regular practice allow trust to be incrementally grown. Even during a crisis, a fine line is to be drawn between avoiding panic and managing perceptions, and the importance of telling the truth and getting honest feedback. A strong community health system will include among others adequate and quality manning, simple and sound infection control protocols, a good supply chain and effective surveillance systems. Its response capabilities in a crisis include control centres with situational awareness and data boards, trained emergency responders, protective equipment, vaccines etc. Communication channels to higher levels must be reliable, robust and possess redundancy.

Whole-of-community preparedness and prevention plans have to be ready and practiced well before epidemics occur. There are a number of existing international protocols drawn up for contingencies e.g. quarantining hotels and public places. Surge capacities required in all kinds of resources are well documented after painful lessons-learnt from previous pandemics.[24] The World Bank in 2019 had stated that countries and global agencies remain trapped in a cycle of panic and neglect, throwing money at disease events whenever they occur, but failing to sustain investment in preparedness when the panic subsides. Along with such grim scenarios is the grave threat of antimicrobial resistance, in simple words non-effectiveness of antibiotics mainly because of poor use and abuse.

Role of Armed Forces

Indian armed forces possess capabilities which can back current actions being adopted by the centre and states. The Army, Navy and Air Force have already vacated many barracks like Jaisalmer, Hindon and many other places to create isolation and monitoring facilities, appropriately named as 'wellness centres'. These are being run by army medical officers and administrative support provided by local military establishments. IAF aircraft are being used to transport essential stores for battling the virus across the country, and available to provide mobility to quick reaction teams.

The Army launched 'Operation Namaste' as part of the whole-of-country war against Covid-19. The armed forces possess inherent capabilities to handle contingencies because of their organisational structure and training. The first resources tapped were medical capacities for managing infected and suspected cases. The Command Hospital in Bengaluru is one nodal centre. Select army hospitals have been nominated for handling cases. The Defence Minister has ordered many ordnance factories and defence production infrastructure to switch to manufacturing masks, PPEs and sanitizers. DRDO is improvising ventilator design for scaling up by private players.

The spread of armed forces' large training areas, bases and vacant areas across the country has potential to be converted transit and medical camps as and when Covid-19 hot spots emerge. The Army has time-tested SOPs for monitoring, tracking and coordinating highway movements on a big scale during wartime. This could offload state police who are needed for other enforcement duties.

Military vehicle and personnel could easily adapt to take up large scale fumigation across the country in case local authorities are overwhelmed by the effort required.

Historically, armed forces have always come to aid of civil as surge resources in crisis that are beyond state-level capacities. Existing orders and protocols have been exercised annually in training or real situations. An important aspect would be own force-protection medically speaking which could erode operational capabilities. Armed forces need to be careful to come as supplementary capacities, and not undermine the already overloaded and fragile civil setup.

Impact on Armed Forces

Armed forces across the nation are prepared with isolation wards, enhanced capacities of hospitals, stocking of PPEs and life saving equipment, besides SOPs for community-level intervention within bases and cantonments. Other measures being done in the civil like social distancing, non-crowding and avoiding of unnecessary movements is being strictly enforced. The usual tight and cramped conditions of barracks and ships require stringent and contextual SOPs. Border areas, counter-insurgency grids and other troubled and active zones require special treatment and care since any major compromising could spell major trouble. A very big issue is annual leave of personnel from the far corners of the country. In case the issue gets prolonged, it would be a major issue.

Training and recruitment cycles would be severely affected. There will be a need for considerable improvisation including online and virtual training solutions. Also, protocols to ensure these maintain

the laid down health norms. But physical activity and training cycles at the troop level would need imaginative and controlled interventions. Defence budgets would inevitably get revised and cut in line with the downturn of economies. The economic impact will adversely affect the defence industry and military budgets in the short- and mid-term. R&D would be affected by restrictions on travel, collaboration and testing. These and many other facets of tighter fiscal control would add to delays and even cutting of ambitious and futuristic projects.

Conclusion

This is a decisive moment in history where change will be abruptly forced down on the world. Behind every mega-disaster there lies scope and opportunity to 'build-back-better'. India must carefully weigh its options after due deliberations, assisted by informed scenario-building exercises, to vision the future and its position in the world. De-globalisation and increased protectionism is a reality for which India must be prepared for, and look at a new 'Swadeshi Movement'. The paper brings out some issues that India needs to 'reckon' with.

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