
. Review Article

How The World Will Be In Future After Covid-19 Pandemic?

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Abstract:

Pandemics are the global outbreaks of infectious disease which widespread human-to-human infection. In past, many significant pandemics like Spanish flu, Ebola, SARS, Hong Kong Flu, Zika were reported. The pandemic related crises affect all avenue of life and have been associated with enormous negative impacts on economy, industries, environment, health, social life, national and global security along with significant social and political disruption. This article will explore the effects of pandemic in future by providing a key feature summary with consequent discussion on the expected impacts of COVID pandemic on global economy, social life, global health system, trade, travel, education, food, different industries, global security, and developing trends in future.

Key words: Covid-19, Pandemic, Impact, Economic crisis, Global recession, Public health, Political effects, Environmental effects.

Introduction:

As the COVID-19 crisis rages, the social life is grinding to a halt. Human toll is enormous, with exponential increase in caseload and mortality worldwide. On the economic side, the pandemic has forced many businesses to slow down or cease operations. In future, over

long term, the COVID could have a lasting global impact on mobility as it drives change in the technology, regulatory trends, macroeconomic environment and consumer behaviors. These trends may vary from one region to another and similarly the outcomes for mobility players will differ by

location. Covid-19 pandemic has highlighted the thoughtful and grave insufficiencies in our existing systems especially in social setup and health systems. Importantly, effective measures and response are required at priority to implement radical changes in these domains at priority. In this aspect, a drastic decision to move away from markets, which use profits as the sole or main way of organizing economy is the way forward. The main benefit of this measure is possibility of building a more humane system, which leaves more resilient social setup to fight against future pandemics, global disasters or other imminent crises like climate changes etc (World Economic Forum 2020). Historically, in nations, social changes happen through different ways and under multiple influences. Our key responsibility in this aspect is that these emerging social forms should be derived or based on some ethics which values care, life and democracy. During this global emergency, the central socio-political objective should be living and (virtually) organizing our priorities around those ethics.

Search Methodology:

The literature for this review is searched from Google, Google Scholar, Research Gate and Expert communication, MEDLINE (Ovid), Medscape, EMBASE, Scopus, HMIC, CINAHL+ and the Journal of social sciences along with other sources by using COVID-19, Pandemic, Future impact, Global changes, Economic, Social, Environment, Work place, Communication as key words. Among a total of 78 full text articles or reports 30 were short listed for review. All relevant scientific papers, written in English were included and non-scientific articles, non-scientific commentary and reports were excluded from the review.

How Will Coronavirus Change The World?

Where will world be in six months, a year, 10 years from now? We all are wondering what the future holds for us and our loved ones? How vulnerable I am, my friends and relatives? What will happen to my job or business? When I need job, will anyone be hiring me? Several imaginable answers or options for future challenges are there, but all depends on how

society or states respond to this pandemic and its economic aftermath. Hopefully, this crisis can be used to rebuild, produce or transform something better and more humane. However, the impact of this crises may slide into something worse than before. It's better that we should understand our situation and assess the challenges that may lie in the future. We should focus on the modern economy fundamentals with special emphasis on [global supply chains](#), productivity and [wages](#). In addition, we should also look into way economic dynamics will contribute to the challenges encountered like deterioration in physical or mental health among [workers](#), [climate change](#) and should argue in detail the needs of different kind of economics to socially and ecologically build a sound [future](#). The overall responses against Covid-19 pandemic are simply the dynamics amplification which also drives other ecological and social crises i.e. to prioritize one type of value over the others. This approach has already played a key role in driving the global responses in combating against the Covid-19 pandemic (Larry 2020). So as these responses evolve, how our futures will develop?

Economic Perspective:

(Husler & Heineke 2020), (Lewis 2014), (Segal 2020) There are four possible version for future, which are perfectly possible if not desired equally and may be considered in economic perspective. These are: a radical state capitalism, a robust state socialism, descent into barbarism or a transformation to build big society on mutual aid

State Capitalism:

is referred to the centralized state response and prioritizing exchange values which is a dominant response across the world right now with typical examples of United Kingdom, Spain and Denmark. In this the state capitalist society, pursue the exchange value continuously as the guiding light of the economy but it knows that market crisis will be supported by the state. For example, in case of workers illness, life fear, the state extends its welfare by extending credits and making direct payments to business and economy. The main rationale behind this is that

increased illness and death will provoke unrest and deepen the economic impacts in society which will force the state to take more stern actions in order to maintain the health system and market functioning. These steps primarily are for short period with an aim to allow trading as many businesses as possible. Main concern is that could this be a successful scenario? Possibly yes, only if Covid-19 is controlled in a short period. Descent into Barbarism refers to decentralized economic response and prioritizing exchange value, which is considered the bleakest scenario. We can see this in future if as a guiding principal, one continues to rely on exchange value and extend no support to those which due to unemployment or illness get locked out of markets. This most likely leads to businesses failure, health system collapse, unemployment due to lack of mechanisms to protect them. The barbarism is ultimately an unstable state which ends in devastation or in transition to some other grid sections but after a period of social and political devastation. Could this happen? The answer is yes if during pandemic or after the pandemic peaks the state fails to step in effectively in supporting the economy, health institutes and households.

Defunding of the critical services would be a disastrous because it will effect severely the state ability to respond to this pandemic. State socialism lays emphasis on centralized response and prioritizing the protection of human life. Actually, the state socialism designates with a cultural shift which brought a different type of value at the heart of the economy for example these changes we can perceive with an extension of the measures in the UK, Denmark and Spain during COVID pandemic. The key here is the actions like nationalization of health institutes and payments to work force are taken not to protect economy, but a mean to protect life itself or essentials of life. So, with these measures the employees no longer rely on employers as intermediaries between them and the basic materials of life. Almost the same payments were made to all directly by the state irrespective of the exchange value they create. In long run, it's

possible that state socialism may arise as a result of attempts at state capitalism if epidemic get prolonged pandemic. Moreover, in case of prolong or deep recessions, most likely there will be disruption in supply chains i.e. demand cannot be met by these standard Keynesian policies as we are seeing now like printing money, making loans easier to get etc.), the state may take over production. This approach has its own risks to this approach i.e. one should be carefully avoiding authoritarianism but executed properly, may be our best hope against extreme pandemic. In this regard, a strong state can amicably marshal the resources to protect the core functions of society and economy. Mutual aid aims to de-centralized response by prioritizing the protection of life. It is considered the second future, in which, protection of life is adopted as the guiding principle in economy but the state does not take a defining role in this scenario, rather small groups and individuals should begin to organize support and care within their communities. The risk associated with this future is that it may not possible for small groups to mobilize rapidly the resources which are required for example to enhance healthcare capacity, provide necessities like food, or in case of COVID provide hand sanitizers and face masks etc. By mobilizing substantial resources, it enables more effective awareness against transmission prevention of disease, by building community support networks that in protecting the and in implementing isolation rules. Groups of people come together in planning regional responses to stop disease spread and to treat patients. This type of scenario could emerge from any of the above-mentioned scenarios i.e. a possible way out of state capitalism or barbarism and could support state socialism. Historically this type of community responses was central in tackling West African Ebola outbreak. This response is also seen in the pandemic as several groups throughout the world have organized community support and care packages. This is a pragmatic, compassionate societal response to a crisis, which can also see as a result of improper or failure of state responses. The caricatures mentioned above are the extreme scenarios which may not be faced in their real form rather most likely to blend into

one another. Among them, descent into barbarism from state capitalism is the most dreadful situation and to my perception the world will follow the merger of state socialism and mutual aid model. This model, ideally comprises of a strong based democratic state which can mobilize its resources to build a sturdier health system, to protect vulnerable can prioritizes social welfare system, amicably responds to and enables their people to form mutual aid groups instead of doing meaningless jobs.

Global Economic Impact:

This pandemic has caused a greatest economic shock globally in memory, outstripping the Global Financial Crisis in its sweep and future uncertainty. A bleak image of the current and future world economy is painted in World Bank's June 2020 report "*Global Economic Prospects*" forecasting around 5.2% contraction of global economy in all developed, developing and emerging economies. In last 60 years, this trend is observed that both groups of economies have experienced a recession, producing a deep, wide, and synchronized economic crisis globally (World Bank Global Economic Prospective 2020). Emerging economies or markets are already affected with these economic disruptions which are causing deep and lasting damage. For example, the three major economic drivers of

majority of emerging markets are tourism, oil and remittances. All three of them have suffered severely during COVID pandemic (Hamdan & Junaedi 2020). In addition, the other economies around the world will gradually face similar debt challenges because the credit markets will dry up and refinancing capacity will prove elusive. The UN Conference on Trade and Development has forecast that the Foreign Direct Investment (FDI) flows will be reduced up to 40% by the end of 2020 with an expected 5-10% further reduction during 2021 (Working Paper NBER 2020). Economists all over the world are forecasting a slow recovery as they endorse extraordinary stimulus and stabilization measures. But it is predicted that despite this massive blow to global trade and connectivity, the

globalization is certain to endure and could bounce back sooner than expected. The more important questions are how globalization will change and what the path to recovery could look like (Hamdan & Jundaedi 2020).

Consumer Spending:

This pandemic has posed an abrupt and devastating shock to the global economy. Along with other fiscal contractions, the consumers will be expected to enhance their saving and suspend their discretionary procurements as an anticipation to difficult time in future. Recently a McKinsey Institute research, has reported almost 40-50% reduction in consumers discretionary spending which may lead up to 10% GDP reduction, along with various second- and third-order effects (McKinsey Global Institute 2020).

Supply Chains:

The pandemic's most significant outcome could be an escalation of national interests by overriding the incentives of free market especially in guiding supply chain formation. The restrictions in free flow of goods are considered a greatest international market shock which will intersect the existing supply chains and will lead to export restrictions among major or developed economies like China and USA. These lasting restrictions along with state incentives most likely will lead to a spark in domestic growth of key industries (Oxford Business Group 2020).

Inequality:

As this pandemic has its disproportionate impacts on poorer economic strata, the inequality will be predicted to rise both globally and between the countries. It is found that the low-waged and skilled workers are disproportionately affected by this outbreak due to unequally distributed job loss. The Gini coefficients (a commonly used measure of wealth distribution in society) will be expected to enhance following pandemics leading to greater disparity in wealth in post recovery phase. The employment in advanced education jobs will not be affected significantly, but for the jobs that require little or no formal training, the employment will fall by more than 5%, even after five years of recovery (Brannen 2020). As a result of this, the global

poverty, which was already showing downward trend since 1998, will increase further. Around 550 million per day of income loss is estimated among the world's poorest individuals due to pandemic. Recently, a Nations University report has estimated that the people living below the global poverty line will exceed up to 1 billion in future as compared to 641 million estimated in 2018 (Working Paper NBER 2020).

The New Workplacecultures:

After active pandemic stage, to control spread of infection, we will still need to follow preventive measures like maintaining social distancing, covering face etc. For example, at workplaces, hot-desking arrangement (where many people use same desk) used in past, needs to revised because at bustling workplacesuch hot desks or spaces would be hotbeds for infection spread or transmission. The businesses or organizationswill need to stagger work-shifts for those employees who needs to go to workplace so that safe distancing can be maintained between the employees. After pandemic, its most likely expected that majority of staff will work from home where possible. More likely, there will be a shift in workplace culture, where employees are valued for how long they sit behind the desk or how well they attend their customers or meet their targets on time. It's expected that the flexitime culture will become more prevalent and perhaps the 9 to 5 work timings will disappear. The more dynamic approach to work may emerge in the longerrun i.e. remote work for solo tasks and combining office hours only for few all hands annual team meetings, if virtual meeting is not possible. Due to this, the workers no longer need to live within commuting distance to office, so they start living wherever most convenient or desirable for them. The most likely knock-on effect of this would be the drop in value of residential properties especially in cities as more people will move to suburbs or rural areas which is a reversal of trend since the beginning of the Industrial Revolution. This is likely to lead tottraffic reduction and expected 30 to15% reduction in public transport capacity (Hamdan & Junaedi 2020), (BBC Future 2020).

Climate Revolution:

Other than all the sufferings, disruptions in life and economic hardship of pandemic, the international lockdowns helpimproving the air quality especially in urban areas. Lockdown has seen more cleaner, calmer, with safer roads and**older wildlife** – which offers a glimpse of what a greener world might be like to live in (Foster & Foster 2020).

The satellite data has reported a significant reduction (30%-40%) in atmospheric NO₂over urban and industrial zones especially in Europe and Asia. Similarly, the levels of particulate mattermainly responsible for respiratory diseases weresignificantlyreduced in atmosphere. Moreover, due to slowing of global economy activity, the CO₂ emissions will be expected to be reducedglobally up to 8% by the end of year 2020 (Foster & Foster 2020), (Islam & Bukhari 2020).

Aging:

This pandemic has infected the aging population i.e. more than 50% of deaths have been among those over the 65 years of age. In Italy almost 85% of deaths reported in population aged 70 years and over which shows the vulnerable or inadequate eldercare facilities leading to high mortality during outbreak. This poses question of what better can be done toensure the health and safety of elderly population in the event of likely future epidemics. In future, to overcome this loss changes in the eldercare approach including enhanced biosecurity to keep the elderly population safe and more connected (Haleem & Javeed 2020).

Urbanization:

These pandemicsproduce long changed cities like the past pandemics brought the cultures of street cleaning, garbage disposal system, water drainage systems, hospitals and effective public health systemetc (Shrestha &Shad 2020).Similarly, in response to this pandemic, the lasting changes to cities globally are already underway.Urban planners are re-organizing the public spaces to ensuremore outdoor recreational areas, parks, green spaces, pedestrian zones etc. At the other end the use of public transport has largely plummeted in partial favor of personal

transport use i.e. about 62% drop in public transport use and 16% increase in car use has been reported from New York. Keeping this in view, there is a need to take steps to increase bike lanes and minimize personal vehicle use. Cities like Paris, New York, Bogota has already started taking effective steps in this aspect (Haleem & Javeed 2020), (Shrestha & Shad 2020). The universal access to public necessities and services without which for public to comply with health measures such as lockdown orders needs to be enhanced in future. Governments in some underdeveloped countries like India, Afghanistan, Kenya, and South Africa have started taking steps to upgrade the informal slums and settlements by providing electric, sanitation and health services to previously unserved areas. Similarly, in a step to create social safety, measures like emergency cash transfers or universal basic income measures were stepped up by some countries like Spain, South Africa, Colombia, Togo etc. In addition, an improved access to services through “smart city” technologies are being provided in some countries (Haleem & Javeed 2020), (Nihiduzzaman & Shih-Kung 2020). This pandemic has also brought attention towards the vulnerability of densely populated areas towards the spread of disease as densely populated cities like New York, Wuhan etc are affected much more. Moreover, around 55% of world’s population lives in urban areas, which will reach up to 66% by 2050. So, the public health and disease surveillance will be a critical consideration for cities of the future (Shrestha & Shad 2020). The enhanced trend in adoption of work remotely has put an open question to the very future of cities especially big cities especially in some regions globally due to this pandemic. Statistically, during March 2020, around 62% of Americans have started working remotely which is almost double before pandemic. Studies observed significant productivity from remote work which has led major companies like Twitter to announce plans to make remote work as a permanent option. This changing trend has put a question on workplace proximity importance and most likely will decrease the importance of cities as business or job hubs which will allow in particular the white-

collar employees to abandon their high-cost urban business hubs for less expensive destinations (BBC Future 2020) (United Nation Department of Economic and Social Affairs 2020).

Global Migration:

According to a United Nations report, by 2050, the global migration of population will increase up to 32.6% from 272 million as reported in 2010-2020. As reported by CSIS’s, size of global migration has affected greatly due to global impact of COVID pandemic due to obstructed movement. Globally, around 220 countries or territories have implemented some type of immigration or travelling restrictions and how or when these new restrictions will be reversed is unclear. Additionally, even these short-term restrictions are also reshaping the future in many ways. Furthermore, the migrant communities and developing economies most likely to lose remittances at a massive scale as World Bank has already projected around 20% reduction in global remittances, which are very crucial in sustaining small or vulnerable economies like Pakistan, India, Burma, Nigeria, Sudan etc. This decrease in remittances will enhance the risks of political instability and deprivation of governance in many global regions may lead to enhanced migration flows towards developed regions after this crisis is over (Brannen 2020), (Shrestha & Shad 2020).

Food:

The global food system which feeds four-fifths of the world’s population has been severely disrupted by Covid-19 mainly due to factors like transportation, economic restrictions, export bans, border closures, labor shortage, limitations of services, and reduced food purchasing power, especially among the poor. Collectively, all these factors pose long lasting structural changes in the form of food insecurity. This increasing food insecurity poses risks to food prices and ultimately political

instability which is directly related to institutional collapse and mass protests. Food-related protests have been reported in different regions over past few months (Oxford Business Group 2020). An increase in vegetable production at local level and more inter-regional food markets to shorten food chains were already forecasted by the UN Food and Agriculture Organization (FAO). This trend leads to dramatically enhanced demand for seeds, poultry, hydroponic and other equipment for in door and vertical farming. A prediction in increase trend in plant-based food consumption as compared to meat which is linked to epidemic is also made by different independent thinker but whether in long term the consumers stick to it or not is a question [Joint Statement by ILO, FAO, IFAD & WHO 2020). To overcome this, the governments needs to ensure secure food supplies through long term effective measures like increasing domestic production, diversifying the food supplies to other countries, and securing the agricultural labor.

Changes In Field Of Technology:

Internet Of Things: During Covid-19, the Internet of Things (IoT) like work-from-home infrastructures, social media, VPN networks, and collaboration tools such as Skype, Zoom, Video conferencing etc. largely remain unaffected rather proved very use full during pandemics. Today, IoT includes more than one trillion or more connected devices globally, spanning all sectors and industries and providing an effective convergence between the digital and physical worlds. The expected long-term impact of pandemic will be increased reliance in all avenues of life like health sector, businesses, education sector, banking, and state working etc. Moreover, the IoT analytics and digital devices will continue to maintain higher levels of digitalization even after the pandemic

retreats like an increasing demand for interactive health care digital portals with online services has reported 500-600% increase in tele-health usage at present (BBC Future 2020), (Ozili 2020). So, it's very likely that an increase trend in medium-to-high consumer demand for tele-health and virtual consultations will increase reliance on IoT in future. Furthermore, the IoT applications which have

been employed directly in the fight against Covid-19 in tracking virus spread and assisting with contact tracing by sharing and analyzing real-time data with monitoring tools and global medical systems will be relied more in future.

Artificial Intelligence:

As predicted, around \$15.7 trillion of the world economy will comprise of AI by 2030. However, COVID-19 has accelerated the overall pace of innovation in AI field especially in health care more than any other sector. This pandemic has also enhanced the extended use of digital assistance such as chatbots: in health care applications, in banking and e-commerce, PayPal (e.g., to handle customer inquiries) and in the call center services industry. Researchers are also using AI in recognizing virus patterns, allowing for early disease detection present (BBC Future 2020), (Qiu & Rutherford 2020).

Access and Privacy:

The Covid-19 has proven digital connectivity a vital link during lockdowns and social distancing. Almost half of the world's population is now online which is expected to reach near 100% by the year 2030. Even though this internet connectivity has proved a net social good, at the other end it requires comprehensive security and surveillance measure enhancement by companies and state, likely with lasting implications for civil liberties and privacy. More than 25, developed and democratic governments have already expanded their surveillance technologies during pandemic like use of GPS tracking to enforce lockdown compliance, cell phone data

collection from telecom companies to monitor public health guidelines adherence etc. This trend along with wide array of other measures will increase and practiced more widely in future (BBC Future 2020), (Haleem &Javaid 2020).

Data Growth:

Due to lockdown, there is a spike in daily online activities because millions are switching to the internet for work, socialization and entertainment leading to extraordinary spikes in data usage and traffic, showing the importance of digital infrastructure in the future of economics and societies. Statistically, 18% increase in in-home data usage, an average 38% increase in daily usage and 70% spike in total internet use and traffic has been observed in March-April 2020 as compared to same time in 2019. All Telecommunication companies, technology platforms are also reporting major surge in data usage like daily Zoom users were increased 4 times, WhatsApp and Microsoft Teams have reported 45% increase in traffic (BBC Future 2020), (World Economic Forum 2020). This enhanced digitalization of social, commercial, services and industrial activities along with growing adoption of technologies such as AI and IoT will lead to global data growth in future. It's evident that at one end where possibly use of data of some apps or technologies may decrease again after Covid-19 but nevertheless its more likely to observe growth of data globally in future.

Knowledge And Learning:

All over the world, e-education has been making steady gains since 2012 and several universities have adopted a hybrid education model, mainly due to its potentials to be flexible, cost effective and reduced tuition fees. The Covid-19 pandemic has necessitated the steps to hyper-accelerate the system to adopt online education. Globally, majority of academic institutes have already transitioned their system to online teaching. At one end, where this rapid transition has posed painful adjustments and highlighted different shortcomings in this technology, a novel hybrid model of learning that synergizes the advantages of sustainable online education needs to be placed (world Economic Forum 2020), (BMJ

Today 2020). This pandemic has forced a better understanding of institutional factors that limit the effectiveness and reach of online education, such as a lack of understanding of online learning styles by faculty, students' perceptions, administrative and marketing support, negative perception of employees towards online degrees and so on.

Robotics:

The National Bureau of Economic Research and the W.E. Upjohn Institute for Employment Research has reported that during economic recession, the labor-replacing automation spikes with the greatest effect on labor or lower-skilled jobs. During the pandemic, an enhanced use of robots has been observed in delivering services, disinfecting public spaces, and assisting health care workers in mitigating the virus spread. In health care, the robots are now being used in daily hospital operations and driving developments in applications which could help with more effective screening, diagnosis and patient care (Andreis & Arian 2020).

In pre-covid-19 Oxford Economics forecast reported that by 2030, around 20 million global manufacturing jobs could be replaced by robots. But now, the present pandemic would most likely accelerate this trend towards robotics adoption, among other forms of automation (Oxford Business Group 2020).

Additive Manufacturing:

At present and in post COVID era, an enhanced trend in additive manufacturing in response to urgent needs, especially in health care industry will be observed. During this pandemic, especially in the beginning the medical supply chains struggled disruption globally and with emerging needs, the additive manufacturing has proved exceedingly agile in supplying vital equipment like personal protective equipment's, ventilators, prosthetics etc. In order to address shortage in this ongoing crisis and to expected pandemic in future, the researchers and companies will be turned to additive manufacturing (Andreis & Arian 2020).

Potential Technology Setbacks:

The COVID-19 pandemic very likely will delay over short to mid-term in technology developments which was already underway or in planning like autonomous driving, micro-mobility, etc. at the other end exponential developments will be expected in biomedical technology, virtual communication technology, artificial intelligence etc. after pandemic is over, we believe that consumer demand for these technologies could soar once again and will increase attractiveness to investors (Hausler&Heineke 2020). This era of crisis has also given an opportunity of more flexible and sophisticated use of technology, less polarization, a revived appreciation for the life and outdoors activities and importance of simple pleasures in life. No one knows or predict exactly that what will come, but here is our best attempt at a guide to the unknown ways that state strategies, economy, society, healthcare, our lifestyles and more—will change.

Hospitality, Tourism And Leisure Industry:

Due to social distancing, stay at home and travelling restrictions and lock down of the hospitality, leisure and tourism industry will be the same as in pre COVID era. Among hospitality industry, due to booking cancellation only hotel industry sought a bail out of around \$150bn, restaurant facing closure, laid off their staff with an estimated job loss to 24.3 million globally, and among them 3.9 million in the US alone (Ozili and Arun 2020). The film industry globally, has incurred around \$5 billion loss during this pandemic due to indefinite suspension or delay in movie productions. This poses a threat that it indirectly means goodbye to cinema, theater or other leisure activities. The International Alliance of Theatrical Stage Employees (IATSE) has reported that due to this corona outbreak an estimated 120,000 below-the-line entertainment industry jobs were lost most of which were theatrical stage employees. Collectively, unemployment levels in the entertainment industry rose to unprecedented highs, which will take a long time to recover and if recovered there will be a gross change in culture and practices of these industries (El-Erian 2020).

Health sector:

Globally, the services of public hospitals and health care facilities grew in high demand during this COVID infection and will be more in future. In many countries the health facilities were improved and expanded as first priority. To achieve this, private hospitals were nationalized in some countries like Spain, or foreign patients were stopped invitation for medical facilities as in Singapore (Lyengar& Mabrouk 2020). As reported by Moody's, most likely there will be a fewer cash flow in health sector in 2020 and then following years as compared to 2019 which is mainly due to widespread uncertainty, rising expenses and the smaller number of elective surgeries due to COVID-19 outbreak. (Ozili and Arun 2020) Also, investment bankers that invested heavily in health care, pressured health care companies and medical supply firms to consider ways through which they can profit from the crisis by increasing prices. This will negatively affect the health sector in future due to shortage in drug or equipment supply, high hospital mortality, insufficient hospital beds and insufficient specialized care or isolation centers to accommodate the rising number of COVID-19 cases (Lyengar& Mabrouk 2020).

Biotechnology:

This pandemic has exactly put into context that what the stakes will be in future for achieving leadership in bio-technology and its related implications for economic competitiveness and national security. Other than accelerating what was already on course has enabled new approaches, and rapid progress in diagnostics, therapeutics, and vaccine developments. Convergent technologies such as cloud computing and AI will be used more in future and will further accelerate the progress in this field (Shu-Ching &Yeur-Hur 2020). COVID-19 will have significant change in normal health care working system with more trend in consultation only in case of emergency and most preference to staying away from routine clinics. In addition, also expect a change in acute care setup leading to redeployment opportunities, staff resilience and out-patient services i.e. more trend towards teleclinic.

Telemedicine: due to expansion in intensive care, directed health care infrastructure has seen a change in trend in telemedicine utility during COVID-19 pandemic. The health organizations have accepted the key role of telemedicine and has developed their departments to facilitate the use of telemedicine in health care. The current and evolving technologies in telemedicine will play a key role in exchange of valid information for diagnosis and management of diseases in future. These innovations are going to be main stay in how we deliver health care in the future (Greenhalgh & Wherton 2020), (Iyengar & El-Nahas 2020).

Medical Education:

Teaching and training is mandatory in all specialties in health profession. During COVID-19, to deliver education and training to doctors at different levels, various online applications have been used effectively and proved to be more convenient, flexible with global participation of trainees and trainers. The smartphone technology has allowed seminars, conferences, workshops, and other forms of online teachings conveniently, cheap and effectively. Now we are heading more towards the Zoom classes, webcams captured hospital rounds; 3D images replaced cadavers, virtual simulators, online chat rooms, webcasting, virtual dissection and E-anatomy with Virtual Reality (BMJ Today 2020). Despite severe disruption in health care delivery all over the world the COVID-19 pandemic has also offered some unique opportunities by allowing us to revisit the healthcare delivery. The optimization and rationalization of the available resources during crisis are among the most important lessons learnt from this crisis. Other than effective use of telemedicine, some other aspects like importance of personal hygiene, infection control, social distancing, were become more priority in our lives (Iyengar & El-Nahas 2020).

Conclusion:

The future does not just happen rather we shape it actively with our perceptions, actions and inactions, especially during times of massive upheaval, which this moment of pandemic certainly represents. Those individuals,

businesses and governments that are most well-organized, disciplined, rigorous, and pragmatic in their assessment of the present challenges our world facing, will emerge strongest from this crisis. Rather than resigning to the trends outlined here, we should think how to actively we can design and mold the kind of world we want—one that avoids a repeat of the type of crisis that is now consuming us. Moreover, the post COVID-19 era might subject to a prolonged state of psychological fear, worries and confusion is going to add a next level challenge to building inclusive and cohesive communities.

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