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Review Article

COVID-19: Containment Strategy and Related Complexities in Developing Countries; New Normal and New World Order

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Abstract

Severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), most likely originated from zoonotic coronavirus in China, has caused coronavirus disease 2019 (COVID-19). Currently, COVID-19, a pandemic declared by World Health Organization (WHO) in March 2020, has spread widely across the world, affecting 215 countries and territories, leading to more than 21 million confirmed cases, and 762,000 deaths.

The virus is transmitted mainly via droplet infection and recently airborne infection has also been identified as a possible mode for transmission. The pathogenesis of COVID-19 seems to be highly complex and involve organs other than lungs and bronchial tree. Although the virus is not so cytopathic, it causes serious types of diseases by modulation the immune system of the infected persons.

The health care delivery systems of developed and advanced countries, especially the Group Seven (G7) countries, formulated different programs to contain the pandemic. However, almost all developed countries, including the United States of America (USA) failed to provide a viable program for containment of the virus even after spending trillions of dollars. UK initially took an aberrant path to contain the virus and finally altered it. Germany, France, and Italy also had high morbidity and mortality. Canada tried to control the pandemic, but it also embraced considerable mortality. Among G7 member countries, Japan contained the virus with minimum cases and minimum mortality by profound cooperation from its people and due to its unique health system for all of it's citizen. The countries those are in between G7 countries and developing ones are also highly affected by COVID-19 pandemic with considerable morbidity and mortality.

Developing and resource-constrained countries are highly variable regarding their population, economic status, and nature of governance. All of them did their best to contain the pandemic. However, several long-lasting problems and realities as well as the

fundamentals of health care delivery system of some developing and resource-constrained countries appeared to be counterproductive for containing this pandemic. Control of pandemic is a matter of comprehensive action of several branches of the government. Lack of coordination among curative and preventive health services, corruption in health-related establishments, presence of syndicate, incoherent and unrealistic policies, immoral physicians and health care personnel, inefficacy of health-related regulatory bodies and lack of scientific oversights are major factors influencing containment of the pandemic in some developing and resource-constrained countries. Elimination of these limitations are extremely necessary for facing COVID-19 pandemic and any future health emergencies of these countries.

Keywords: *COVID-19 Pandemic; SARS-CoV-2; Developed Countries; Developing Countries; Health Syndicate*

Abbreviations

SARS: Severe Acute Respiratory Syndrome; MERS: Middle-East respiratory syndrome; COVID-19: Coronavirus Disease 2019; WHO: World Health Organization; SARS-CoV-2: Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2); PCR: Polymerase Chain Reaction; GDP: Gross Domestic Product; ARDS: Acute Respiratory Distress Syndrome; ACE-2: Angiotensin-Converting Enzyme-2 (ACE-2); DIC: Disseminated Intravascular Coagulopathy; FDA: Food and Drug Administration (FDA); ECMO: Extracorporeal Membrane Oxygenation

Introduction

At present, the whole world is facing an emergency situation. The Olympic of 2020 in Japan has been postponed despite spending billions of dollars. The wheels of industry are at rest, the hospitals are working partially; the chronic patients including dialysis patients and other emergency patients have denied treatment. Unfortunately, the most pathetic part of mankind has been exposed by the fact that the nears and dears have showed extreme reluctance and refusal to take care of dead bodies for funeral of their relatives. The people has become motionless and normal movements have been replaced by LOCK-DOWN. All scientific conferences and social meetings are halted and several religious rituals have been closed or reduced. Millions of people are jobless and billions are self-contained in their houses [1]. For the first time in the world, these abnormal situations have prevailed for the last 7 months and no one knows about the exit strategy from this situation.

Let's see why and how the world has changed so much due to a virus. The virus emerged in China either in bat or pangolin or human and caused a flu-like disease. The virus is a coronavirus, a close relative of some other well-known viruses such as SARS and MERS [2]. The new virus is little different from SARS and MERS and has been named SARS-CoV-2. The name of the disease caused by SARS-CoV-2 is COVID-19. On March 11th 2020, WHO declared COVID-19 a pandemic after confirming human to human transmission of SARS-CoV-2 among it's different regions [3]. As of today (15th August 2020), about 21 million people have been infected with SARS-CoV-2 and about 762,000 people have died from COVID-19 [4].

There are some specific features of this virus that include: (1) The only way of diagnosis of COVID-19 is based on detection of SARS-CoV-2 in nasal swab by PCR technique. The virus is rarely found in blood or other body fluids and detection of viral antigen and antibody have not been optimized on the day of infection or after one or two days, making serodiagnosis extremely difficult for SARS-CoV-2. (2) There is no specific anti-COVID-19 drug. Drugs those were developed for SARS, MERS, and Ebola are now used as optional therapy for COVID-19 patients. (3) As of today (15th August 2020), a prophylactic vaccine could not be developed for containing SARS-CoV-2, although several vaccine candidates are on clinical trial in different parts of the world. One mRNA-based vaccine and one adenovirus-based vaccine have been developed in UK and USA, respectively. In addition, China, Russia and Japan have been developing vaccines for SARS-CoV-2, but details of those evolving vaccines are yet to be available to make a judgment about their efficacy. It seems that a vaccine of compromised nature with limited efficacy may be available in 2021. (4) The vaccine would need more than one administration and the protection conferred against the virus may be partial. The economic impact of COVID-19 is enormous. The gross domestic product (GDP) of almost all countries are going down. Most importantly, it seems that COVID-19 will not disappear like flu or even like the Spanish flu pandemic of 1918, as it is not only a flu virus. An important fact is that SARS-CoV-2 infects

several tissues in addition to the respiratory organs. SARS-CoV-2 may alter its pandemic role and remain as an endemic virus for years or decades [5]. The most notable concern is that SARS-CoV-2 may undergo further mutations, which may induce devastating consequences. The scientists are yet to explain these future concerns to general people, although this is a scholastic responsibility of all.

Purpose of the Study

The purpose of this article is to provide an outline regarding the limitation of the containment measures against COVID-19. Initially, we would discuss about the health care status of developed countries. Subsequently, we would mainly focus about constrains of health services of developing and resource-constrained countries. Also, we would discuss about the scientific limitations of these countries regarding containment of a pandemic. These discussions would provide insights as how COVID-19 is going to dictate the concept of the new normal and new world order.

Clinical spectrums of COVID-2019

How the patients develop pathological symptoms

The disease, COVID-19, may have different faces; it may be asymptomatic or there may have mild symptoms suggesting a flu-like disease. In some patients, it can exhibit as a moderate type of illness with fever and minor symptoms. In the course of disease, some patients progress to severe pneumonia and other serious complications leading to death. Extra-pulmonary complications may be seen in some patients; however, the exact mechanisms underlying these pathogeneses are yet to be studied and clarified. A short account of the diverse pathological processes of COVID-19 and it's scientific basis are discussed below in short [6].

Asymptomatic COVID-19

After the entry of SARS-CoV-2 in our body via nasal route, this may cause a variety of pathological conditions those mainly are dependent on some fundamental factors: (1) inherent strength of host immunity and (2) nature of virus and (3) complex interaction among virus and the host immunity.

If the host immunity is sufficient, the virus is expected to be controlled within the upper part of the respiratory tract by the innate immunity of the host. In this situation, most of the SARS-CoV-2-infected patients may remain asymptomatic or may have mild symptoms. Even though they are asymptomatic, they are infective and represent a major source of transmission of SARS-CoV-2 [7].

Moderate and severe forms of COVID-19

A group of patients of COVID-19 become unable to contain the virus at upper respiratory tract and the virus moves downwards to lower respiratory tract. The damage caused by localization of excessive virus and cytokine storm induces inflammation of lungs leading to pneumonia and ARDS. These patients would proceed to a fatal outcome if they are not rescued by special therapy including oxygen support and blocking of cytokine storm by immune suppressors. Even with these supportive therapies, the outcome may not be satisfactory in some patients [8,9]. Usage of ECMO may be beneficial in these patients [10].

COVID-19-induced pathophysiology in organs other than lungs

COVID-19 is not only a disease of lung and respiratory tract. Credible evidences indicate that the SARS-CoV-2 also infect oral and nasal mucosa, nasopharynx, lung, stomach, small intestine, colon via ACE-2, Histopathological studies have also reported expression of SARS-CoV-2 in renal, myocardial, neurologic, pharyngeal, and gastrointestinal tissues. Furthermore, ACE-2 was expressed in arterial and venous endothelial cells and arterial smooth muscle cells in all organs studied. Taken together, SARS-CoV-2 may enter several tissues and organs in addition to pulmonary tissues [11-13]. However, these points remain to be explored properly to develop insights about this complex pathological condition. Also, a major challenge to scientists to clarify if SARS-CoV-2 induce damage and destruction of these tissues. However, studies have shown that SARS-CoV-2 induce pathological lesions in vascular system. SARS-CoV-2 can enter via the vascular epithelium, venous endothelial cells and arterial smooth muscle cells. In fact, SARS-CoV-2 -induced infection can be associated with a coagulopathy. Findings of this infection-induced inflammatory changes as observed in patients is consistent with DIC [14-16].

Pandemic COVID-19: World-wide migration

COVID-19 in Asia

On December 31, 2019, a cluster of pneumonia cases of unknown etiology was reported in Wuhan city of Hubei province in China. Those cases were later attributed to be due to SARS-CoV-2. The infection travelled from China to nearby countries of Asia. Afterwards, COVID-19 was found in almost all countries and territories of the world with different prevalence and severity [17].

COVID-19 in Europe

On 24th January 2020, first cases of COVID-19 were notified in Europe. It was detected in Germany. Subsequently, Italy was hit the hardest of any European country and Italy is the first in the world to issue a nationwide lockdown. On 8th March 2020 the northern region of Lombardy and 14 other provinces were shut down. This measure induced lock down on 16 million of people in Milan and Venice. The next day that lockdown was extended to cover the entire country. The number of confirmed COVID-19 deaths in Italy has since risen. Within a week of Italy imposing its strict measures, many other European countries took similar steps as shown below: On 12th March 2020, Ireland closed schools and cancelled planned St. Patrick's Day parades; 15th March 2020, The Netherlands announced the closure of all it's schools; 16th March 2020, Iceland banned all gatherings of more than 100 people; 17th March 2020 March France, announced a nationwide lockdown, which was set to last till 11th May 2020, Spain, another nation suffering from high rates of infection and fatality, initiated a series of lockdowns and on 27th March ordered all non-essential workers to stay home. Subsequently, lock down was imposed in UK. Thus, entire Europe became a hot spot for COVID-19. The only country in Europe that did not follow the lockdown measures is Sweden. There has been no lockdown or social distancing policies and most schools and businesses have remained open. The country depends on the awareness of its citizens [18].

COVID-19 in USA

The first confirmed case of local transmission in USA was recorded in January 2020, while the first known deaths were reported in February. By the end of March, cases were reported from all 50 U.S. states, the District of Columbia, and all inhabited U.S. territories except American Samoa. A national emergency was declared by President Trump on March 13th 2020. In early March, the FDA began allowing public health agencies and private companies to develop and administer tests, and loosened restrictions so anyone with a doctor's advice could be tested. The number of COVID-19 cases increased in different parts of USA and at present, USA harbors the majority COVID-19 patients [19].

Containment of COVID-19 in developed and advanced and rich countries

COVID-19 started it's journey from China. After brisk presence in neighboring countries of Asia, it stepped in Europe. After devastating Europe, it moved to upper part of the American continent. Then, it moved to Latin America. About 7 months after the beginning of COVID-19 outbreak in China, the numbers of patients are increasing in almost all parts of the world. There has been some abnormal peak of COVID-19 at some time points and then declined. However, COVID-19 free status has not been persistently seen in any country. As of 15th August, the daily number of new patients has reached 285,901 with a daily mortality of 5944 persons.

Without any specific drug against COVID-19 and in the absence of a vaccine, containment of this pandemic depends accepting of 3Ts as recommended by WHO (Test, and Tracing, and Treatment). In addition, Japan has induced a concept of avoidance of 3Cs (Closed space, Crowded places, and Close-contact settings) for containment of the pandemic [20].

European countries mostly tried their best to implement 3Ts and 3Cs for containment of COVID-19. As of today, although COVID-19 is mostly contained in the European countries, considerable number of COVID-19 cases still prevail over there. Also, new cases of COVID-19 are emerging in all countries of Europe every day. There may be serious outbreak of COVID-19 in future in Europe as little has been explored about the fundamentals of the present outbreak of COVID-19 on European soil. Thus, utmost precaution should be taken to contain COVID-19 once again in Europe.

COVID-19 has not been contained in USA and many Latin American countries. There are several factors related to this. There has not been any proper strategy for control of COVID-19. The heads of the states of USA and Brazil provided elusive strategies for control of COVID-19. Although the frequencies of COVID-19 patients have been increasing in most of the US states, proper strategies from the federal government have not been formulated. Also, difference of opinion between federal government and state governments hinder control of COVID-19 in USA.

The condition of COVID-19 is worsening in countries of Latin America with few exceptions. They are not ready to adhere to scientific advice. In addition, heads of the states of some countries like Brazil refused to adhere to the fundamental aspects of COVID-19 containment namely Testing, Tracing and Treatment.

Containment of COVID-19 in resource-constrained countries

Containment of COVID-19 in developing countries faces several

problems and limitations those are completely different from the situation of developed countries. The resource-constrained countries are not only endowed with limited resources, but they have fundamental problems with the implementation and understanding of basic norms of science. These include lack of; (1) scientific vision, (2) evidence-based planning, (3) professional commitment, (4) scientific planning, and (5) proper use of limited resources. In addition to these, corruption is endemic in many resource-constrained countries and thus proper planning for containment of a pandemic become impossible.

Developing and resource-constrained countries are highly variable regarding their financial resources, population, economic status, scholastic resources, system of governance and national policy. Thus, it is extremely difficult to provide a uniform strategy of COVID-19 containment in these countries. The realities that have been documented here are not applicable of all developing and resource-constrained countries. A general picture of some countries has been documented here. In the context of control and containment of COVID-19 in developing countries the following facts may be relevant in some countries:

A. Some of the countries were never prepared for epidemic and their infrastructure development is inappropriate.

B. Many of the countries were not prepared to establish diagnosis of SARS-CoV-2 by PCR technique. Some of them had several PCR facilities, however, systemic organization of PCR was not accomplished.

C. Men behind the PCR machines were not properly trained in developing countries.

D. Validation of tests was not accomplished as good clinical practice has not been adopted in most countries and this concept was not known to many of them.

E. There are two major factors for management of COVID-2019. Some of the patients require hospital treatment and others need isolation. Hospitals were not ready for accommodating huge numbers of patients and their management. Thus, proper management of these patients were not accomplished.

F. The concept of isolation was not conveyed to health workers or even to their leaders. Proper arrangements for isolation were mostly absent in most developing countries. Even, many rich countries could not adopt the concept of isolation and tracing of patients.

G. The most tragic fact is that people were encouraged to stay at home isolation without considering the number of rooms in their houses and infrastructure facilities of the families.

H. Diagnosis of SARS-CoV-2 and hospital treatment were not free in many countries. Unfortunately, there were so costly that many ~~confected~~ people could not be tested.

I. Lock down was not scientifically organized in many cases. Some countries induced lock down without providing adequate time for preparation.

J. Lock down was a mess when people tried to move to their places of residence. They could not move from one province to their own one. In some cases, the work places of some people and their native places are about 1000 KMs apart.

K. The local and central governments could not work properly with a common standard. They have been adopting different approaches for containment of COVID-19. Comprehensive discussion of the above factors is not within the scope of this article. We have just mentioned the realities and limitations and these will differ from country to country.

Management of an emergency by health care delivery system of developing countries

Pandemic and medical emergencies are common in developing countries. The number of physicians, paramedics, nurses, health personnel, and field staff may not be adequate, but they are more or less trained to work for containment of pandemic or epidemic or endemic. In fact, the comprehensive health care system of these countries has eradicated small pox, going to bid farewell to polio, and implemented expanded program of immunization. Recently, new realities have unmasked and these may have short-term and ling-term effect on the health care delivery system of these countries. These are not attributable to all developing countries, but the impact of these factors should be seriously considered for proper functioning of health services. Even with these several positive factors, the heath service delivery system becomes unable to work properly during a pandemic. These points will ~~nc~~ highlighted in next chapters.

Persistent corruptions, influencing and their impact on control of COVID-19 in developing and resource-constrained countries

These countries are highly heterogenous in regard to cultural

aspect and the governance system. Health care delivery system in most developing and resource-constrained countries are highly variable; some countries spend more money than others. Some of the countries are economically solvent or basically rich. On the other hand, some countries are economically shattered. The population of these countries are also extremely variable and varies from billion to less than million. Internal and external conflicts are prevailing in many of these countries. Taken together, it is extremely difficult to provide a single design of containment of COVID-19 or any other health emergency for these countries. We would try to concentrate on some specific points those may be relevant to most of the developing and resource-constrained countries.

COVID-19 is a highly complex pathological process and is expanding day by day with showing no sign of containment or reduction. SARS-CoV-2 is a complex virus and this virus and the pandemic caused by the virus cannot be contained by traditional means. The approach to contain the virus should be very scientific. Very few countries have shown some sort of control of COVID-19 and are already fighting against the second wave of infection and other factors. The developing countries and resource-constrained countries lack requisite scientific know how in many aspects.

The factors described above represent some inherent limitations of health care delivery system of developing countries. However, they are endowed with some corrupted system those have been inherited during last 4 or 5 decades. These include: (1) inherently corrupted health system, (2) impaired and aberrant mentality of a group of specialists and physicians, (3) illegal activities of private healthcare facilities, (4) inhuman attitude of pharmaceutical companies, (5) inactivity of legal systems including those of medical associations and medical councils, (6) inability of development of medical research system. Above all, the pro-people health system has not been developed by various syndicate. These are realities in different countries in different forms. And, these have mainly visible during last 3 - 4 decades along with economic development of some countries. However, lack of proper functioning of regulatory authorities and reluctance of the governments for accountability could not dissect the problems or resolve these heath care issues.

Historically, health services have been provided only by the government in many developing countries. The hospitals were not well-equipped as adequate resources were not available for health services. Also, at that time, new instruments for diagnosis were not available in many developing countries. Initially, the services were mostly free or semi-free and some minor charges were imposed later on for health services.

As the economic condition of the developing countries improved with the generation of upper middle class and rich people, there was strong demand for better hospitals and better medical services. Thus, the concept of private hospitals came into being sight. The private hospitals came up with sophisticated instruments and diagnostic facilities. In the meantime, private medical schools also emerged and affiliated hospitals were also developed. These positive developments definitely improved the health care delivery system of these countries. However, it remained touchable by less than 5 - 10% people of the country, remain beyond the health care of more than 90% people of the country. The next, these hospitals and organizations were devoted to curative health services and the concept of delivery of preventive health care was not within their agenda. In addition to be costly, the private hospitals initiated unethical, and inhumane medical practices in some developing and resource-constrained countries:

1. Most of the private hospitals offer chambers for private practice to the specialists and sub-specialists. Ultimately, these centers became central medical treatment providers. Also, these private hospitals and diagnostic centers arrange several improved and sophisticated instruments for better diagnosis and treatment.
2. Unfortunately, private hospitals in many developing countries introduced a system of directly influencing the specialists. This system has been regarded as reference system. These specialists recommend some investigations for patients and received money from the hospitals that may be a significant percentage of the cost of investigations. These facts induce two important realities: (1) it destroys the morality of specialists and (2) lead to excessive investigations. Although the entire procedure is illegal, none of the specialists have been brought to justice in any country.
3. A second way of influencing the specialists was initiated by pharmaceutical companies in which they offered cash incentives for prescriptions. In addition, the pharmaceutical

companies introduced medicines those are not officially approved. A syndicate of activity has been developed by pharmaceutical companies and these scrupulous drug business is a normal business in many countries.

4. These activities inflicted undue costs for patients: (1) investigations were increased (2) Repeated investigations became a normal system, (3) prescribing costly drugs and undue prescriptions sky rocketed, (4) hospital stays became prolonged and (5) undue use of intensive care units were seen.
5. Pharmaceutical companies also started to support specialists for joining international conferences. Apparently, this is appreciable for scientific development of doctors of developing countries. However, most of the doctors enjoyed tours and seldom attended the conferences.
6. Although these irregulates are common in many developing countries, the regulatory authorities and legal systems are silent about this.

The first line of soldiers for containing COVID-19

When under these realities the SARS-CoV-2 virus suddenly infected people of all classes in developing and resource-constrained countries, situation became very complex for the governments to resolve. Initially, there were limited PCR facilities for diagnosis of COVID-19 patients. With passage of time, this capacity was increased in all countries, but untrained people remained at the helm and the quality of tests declined and confusing results started to emerge. In some countries newer types of corruption started. Some companies and clinics did not accomplish the diagnosis at all and provided elusive reports. Many of these reports were challenged at international airports or in other countries. In this time, some of the governments introduced charges for COVID-19 testing that reduced the frequency of testing and ultimately destroyed the fundamental principle of 3T (Testing, tracing and treatment).

When all these factors were prevailing, the front line of COVID was mainly addressed by general doctors (non-specialists), nurses, health technicians and several other allied personnel of medical and non-medical background with help from the specialists. Also, the police and other regimented forces worked in the front line.

Now, it is extremely important to get rid of this situation in developing and resource-constrained countries, but it might not be easy matter even though everyone is hoping for that:

1. COVID-19 is a pandemic and this may be contained by having someone with adequate knowledge about both curative medicine and public health measures. Unfortunately, in most of the developing countries clinicians without any knowledge of public health have been assigned to lead the battle against this emergency. It remains elusive how a man without knowledge of epidemiology and pandemic would act as general of a battle.
2. As per WHO recommendation, every country should move with the target of ensuring 3T (Test, Tracing and Treatment). These fundamental objectives are now in jeopardy in many countries due to loss of trust of people on private hospitals and corruptions.
3. "Medical Research Councils" of all countries should initiate some research about virological and genetic factors of SARS-CoV-2 of their locality. In many countries, there is no laboratory for such research. Thus, people of those countries are not getting proper advice from their relevant authorities. Paradoxically, researchers are not leading many of these research institutions.
4. Medical associations should take care of the interest of junior doctors. They also tremendously failed to assess the safety of personal protection equipment supplied by the scrupulous companies in many instances.
5. Medical Council, which is the regulatory body of any country should initiate proper and systemic legal actions against these scrupulous elements.

Inducing non-scientific concept in the shadow of science during pandemic

It is an open question if any antibody or antigen-based tests kits for diagnosis of SARS-CoV-2 can be developed in a developing country by its own. Theoretically, this is possible. But the following facts must be borne in mind:

1. The virus is mostly not detected in blood after infection or within one or two days. Thus, any claim that SARS-CoV-2 positivity would be diagnosed from blood is not valid. If some one make such claims, he or she should be logically bound to explain these facts.
2. The antibody to SARS-CoV-2 is produced in the blood after some days or weeks. Thus, the presence of any type of anti-

body in blood cannot be used for diagnosis of SARS-CoV-2 infection.

3. Whoever claims that antibody test for SARS-CoV-2 is more sensitive than PCR test should come with proper evidence.
4. If anyone discovers an antigen that appears in blood soon after infection, this should be published in peer-reviewed journal for validation by the scientific community. Then, they should come up with an antigen testing for early diagnosis of SARS-CoV-2.
5. The antibody test may only be done for epidemiological assessment and to develop insight as of what percentage of the population is infected in a community, but not for diagnosis of SARS-CoV-2.
6. Science deal with evidence and truth. It is not scientific to provide support for something developing in one country that is not evidence-based. Rather, all supports of the country should be given to scientific concerns.
7. Development of vaccine for COVID-19 is a complex maneuver and induction of antibody by SARS-CoV-2 represent only 1% effort of vaccine development. If anyone intends to develop a vaccine for SARS-CoV-2 in a developing country, the entire strategy should be described. Next, there should be GMP facility for developing vaccine and thus if anyone make elusive demand regarding vaccine development, he or she should come with evidences.
8. It is natural that if someone of a country demands that he or she has developed an assessment kit for SARS-CoV-2 or someone is on the way to develop a vaccine for SARS-CoV-2, he or she should come with evidence. Such a declaration usually gives excitation and pride to the country. This should be considered a crime if the fundamentals cannot be proved with evidence. People should also be informed after confirmation of a fact.

New world order after COVID-19

Developed countries

Enjoying health services, along with food and education represent fundamental rights of all human beings. This has been mentioned in the constitution of most countries. Unfortunately, developed counties have yet not succeeded to ensure this for all their citizens. Among the G7 countries, USA has categorically failed to provide a system of health for all. Rather, health has become a matter of business and the insurance companies basically decide who would get hospital service. The industries related to health is absolutely devoted to making profit without considering the needs of people and ethics.

The European countries are comparatively better in this respect and health seems to be the right of their citizens. Japan provides a system of national health insurance in which the premium is based on income and service is homogenous for all. Thus, health services are provided to all as a right of their citizenship.

During the pandemic of COVID-19, the concept of new world order exposed seriously and USA failed to guide it's citizens. This is mainly due to constrain of scientific vision of the leaders. There was always struggle between politics and science. Ultimately, everything became confusing at the cost of sufferings of the people.

There was some anomaly in the European countries as well. The death toll of several thousands in almost all European countries is not also acceptable and seems to be an outcome of ill decision by the politicians.

The management of Japan is not out of question also. However, Japan contained the COVID-19 epidemic with minimum deaths. Also, Japan is one of the countries that accomplished minimum number of PCR tests. The pros and cons of this policy need to be assessed. To prepare for the 'NEW NORMAL' we need to compare and discuss how these developed countries managed the health need of their people during COVID-19 pandemic.

Developing and resource-constrained countries

These countries usually get the direction from developed countries. The condition of developed countries was endowed with fallacies, confusion and politics prevailing over science. Thus, the developing countries were even more confused as to what should be done. A clear future path has to be perceived by the developing countries. They have to take care of their people and children. These countries have problems with their socio-economic conditions, as mentioned. They have quite good numbers of doctors who would not hesitate to submit their lives and souls to act in the frontline and specialists who can provide their guidance if proper planning is done. What they do not have is the presence of science and scientific concepts. The legal system is also extremely weak. The medical research councils are actually doing little or nothing

and are unable to do anything meaningful during this pandemic. The Medical Research Councils should be optimized from now on to handle science and scientific know how. The leaders during epidemics should be epidemiologists and specialist physicians, not bureaucrats. The media has one of the most important roles to covey the truth to the whole nation, as understanding of a pandemic to the people is most important. Reduction of corruption, avoidance of elusive activity of reference system of paying money for investigation to specialists by private hospitals, blocking of money distribution for prescription by pharmaceutical companies, stopping of aberrant scientific conferences in foreign countries and restoration of professional pride of the doctors would provide the impetus for containment of COVID-19 pandemic as well as other medical emergencies in new world order.

Conclusion

COVID-19 is major challenge to our existing health care delivery system. Due to the complex nature of COVID-19, containment of COVID-19 is not only difficult, it may take years or decades. An overhaling of health system along with induction of science and truth at all aspects of health establishments is essential to get rid of it. Also, COVID-19 possibly heralds the necessity and entry to new world order in global health and social systems.

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Conflict of Interest

There is no conflict of interest about this article.

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