

Effects of the coronavirus pandemic on the medical marketplace, insurance, and hospitals – current situation and prediction

Madhukar Sharma,

¹(CEO, Ace Medical, U.S.A.)

Abstract: On March 11, the WHO declared a global pandemic. Since then, the current pandemic has affected the whole world on many levels, starting primarily with the health care system to economy, education, business, a transit of goods. The novel coronavirus pandemic has led to an unprecedented challenge for the healthcare system around the globe. Healthcare workers, especially those on the front line are under constant pressure most exposed and to a certain extent due to long exposure most prone to contract the coronavirus. As doctors, nurses, and other healthcare staff are not able to work remotely, early testing of front-line workers is of the utmost importance. The number of hospitals has reached maximum capacities. Due to this, hospitals more and more turning to technological solutions in order to provide care for the patients minimizing the risk of exposure and contracting the coronavirus. There are concerning reports that around 100 health care workers of one hospital have to be quarantined due to the exposure of coronavirus. This affects immensely workforce capacity putting a considerable amount of pressure on healthcare workers who are not quarantined at that moment. The current pandemic caused by SARS-cov-2 focused all medical attention and power on treating infected with this virus and contain further spreading. However, we must not forget that out there are patients with non-COVID-19-related diseases.

Key Word: coronavirus, pandemic, medical insurance, hospitals, healthcare, marketplace

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I. Introduction

The World Health Organization on January 30, 2020, declared public health emergency of international concerns. The outbreak of the novel coronavirus, SARS-cov-2, emerged from the wet market in Wuhan, China, the capital of Hubei province. On March 11, the WHO declared a global pandemic. Since then, the current pandemic has affected the whole world on many levels, starting primarily with the health care system to economy, education, business, a transit of goods. Fear of COVID-19 has a profound impact on our society, showing that the world still does not have an adequate response in containing global threats (1). This outbreak has led countries close borders, issue travel bans, impose strict quarantines, close school. Metaphorically speaking, this pandemic makes the world collapse in many ways, making the marketplace mostly affected besides health sector (2). Moreover, supplies in hospitals around the world have become significantly limited and outsourced as well as hospitals' beds. Our society has had a few pandemic outbreaks in the past. However, still it is hard to predict long-term economic, behavioural, and societal consequences as until now there are no many studies on this topic (3).

History of animals and pandemics

Around three-quarters of infectious diseases in humans are caused by the zoonotic origin of microorganism (2). The COVID-19 is just one of many pandemic outbreaks which origins can be found in close interaction between humans and animals (4). The plague is caused by *Yersinia pestis*, bacteria for which rats are vectors, and rat's fleas (5). Consumption of wildlife whether for food or as a medicament as in some cultures are belief, significantly contributed to outbreaks, not only the SARS-cov-2 virus but many in the close and distant past. These are the main pathways of spreading zoonotic disease and considerable contributing factors in the onset of pandemic (6). Wet markets are one of the main sources, especially in Asian countries where eating wildlife meats and using as a cure is a part of a tradition. Regardless of the current pandemic, one study found that in one such market in Malaysia animals are a host of 19 bacteria, 16 viruses, and 16 parasites that can be transmitted to humans (7). Considering these numbers and potential for transmitting, the interaction between animals and humans has a high potential to initiate new epidemics and pandemics (8). Therefore, governments of the countries where wet markets exist must implement strict rules regarding hygiene, disinfection, sanitation.

The necessity of healthcare reforms

The novel coronavirus pandemic has led to an unprecedented challenge for the healthcare system around the globe. Healthcare workers, especially those on the front line are under constant pressure most exposed and to a certain extent due to long exposure most prone to contract the coronavirus (9). As doctors, nurses, and other healthcare staff are not able to work remotely, early testing of front-line workers is of the utmost importance (10). In March, when the World Health Organization declared the SARS-cov-2 pandemic world experienced the greatest ever upsurge in the medical and personal protective equipment. The sudden shortage of personal protective equipment such as N95 face masks, lack of hospital beds, especially in the Intensive Care Unit (ICU), lack of mechanical ventilators as well as high healthcare costs in some countries, suddenly revealed all falls of healthcare systems worldwide. Uninsured persons are especially hindered in the United States. Many of the uninsured people need to work on places that could predispose them to the coronavirus which makes a considerable financial consequence in case of illness (11).

Deep changes in healthcare must occur. Unfortunately, if we compare money invested in threatening diseases in the late stages with money invested in the prevention of disease, much more money is allocated in the latter. Considering that in these times, when the pandemic is in every corner of the world, we still advocate for the most basic measures to prevent the spreading of the novel coronavirus. Hygiene, washing regularly hands with soap and alcohol, maintaining distance, wearing face masks are the most effective measures in the prevention of contracting the virus. In view of this, preventive measures must be invested much more money. Changes in healthcare policy and management in the clinical settings change almost on a daily basis as the new evidence emerges (9,12).

The demand for respiratory ventilators has skyrocketed. Even some of the best healthcare systems in the world have experienced and still experiencing a shortage of mechanical ventilators (13). It has been estimated that the USA has around 160,000 ventilators. In a severe pandemic, there is a shortage of 580,000 of these life-saving machines (13). In the United Kingdom, all forces are mobilized on manufacturing medical supplies. The prime minister of the UK even asked Rolls Royce and Dyson to switch their production to mechanical ventilators. However, even the most powerful companies struggle with this as most of them do not produce any medical equipment. Another factor is that mechanical ventilators need first of all to be safe and to satisfy strict regulation and testing in order to ensure safety which is a lengthy process (9,13).

Pharmaceutical ingredients in the US are in great amount imported from India (18%), the EU (26%) and China (13%). Moreover, accounting for 39.3% China is the biggest supplier of the US regarding medical devices, (14). As the economy and production shutter down, limitations in export lead to significant loss of revenue.

However, although the global economy has suffered unimaginable losses, some companies have benefited and some could benefit from the global crisis. Pharmaceutical companies around the globe get into the race to find the first effective and safe vaccine. Finding a vaccine is the crucial moment in this pandemic as it is the only efficient way to combat this pandemic. At the moment, there are a number of vaccines in Phase 1 trial (9).

The shape of the new healthcare system

The number of hospitals has reached maximum capacities. Due to this, hospitals more and more turning to technological solutions in order to provide care for the patients minimizing the risk of exposure and contracting the coronavirus. Because of this, telemedicine and telehealth are in the greatest expansion ever seen before. This provides medical practitioners to communicate with patients, monitor their health, and at the same time minimize the risk of infection by visiting the hospital (15). In China, drones deliver medications and other medical supplies.

As healthcare systems worldwide need to embrace COVID-19 patients, urgent action is required to unleash the power of new technologies. Despite that telemedicine exists for decades, it is far from reaching the maximum potential. Actually, telemedicine is rarely used in the modern world (16).

Telemedicine cannot be created overnight. However, the US health system has implemented to a certain extent some of the telemedicine innovation, which might be a leverage for the response to the ongoing pandemic. The central strategy in pandemic should be "forward triage". By this term is meant sorting the patients even before they arrive at the hospital. Telemedicine provides the comfort of being at home and have a medical consultation and more importantly reduce the chance of contracting the virus in the hospital environment. Nowadays, it is easily done by and patients can visit doctors online 24/7 in just a few clicks by smartphones or webcams. This approach is especially beneficial for patients with respiratory symptoms as a doctor can evaluate the signs and symptoms and decide whether the patient needs to visit a doctor in person or not (17).

Although telemedicine as mentioned above is not in high demand in the world, more than 50 U.S hospitals implemented telemedicine. These institutions have significant leverage in threatening patients and probably soon and many other hospitals worldwide will implement the same telemedicine system (17).

In-patient settings, a patient screened positive for the SARS-cov-2 virus can be given a tablet and then isolated. This would make possible telehealth visits without exposing staff to unnecessary risk of infection. Moreover, for patients who tested positive but are asymptomatic or with minor symptoms, telehealth visits would provide monitoring of the patients' condition (17).

The electronic intensive care unit (e-ICU) monitoring program is a remote system that allows medical doctors and nurses to remotely observe the health status of 60-100 patients in ICU in multiple hospitals. Although this system needs time to be implemented, for now, the best way to reduce the risk of exposure in two tablet approach (17).

Mobile integrated health care programs conducted by paramedics, allow them to provide a virtually high level of medical support. Some hospitals during the pandemic are preparing to send mobile health care units and conduct home-based testing. This program might facilitate the evaluation of health conditions and if necessary, transfer patients directly to the hospital bed. In this way, exposure of the other patients and doctors in the Emergency Department is reduced (17).

Hospitals in new normal

There are concerning reports that around 100 health care workers of one hospital have to be quarantined due to the exposure of coronavirus. This affects immensely workforce capacity putting a considerable amount of pressure on healthcare workers who are not quarantined at that moment. Hospitals and other healthcare facilities that have implemented telemedicine in their service quarantined medical doctors who have no symptoms still are able to provide medical consultations via telemedicine. This is beneficial in many ways as quarantined doctors may cover medical services and, in that way, free doctors in hospitals in the in-person visit of patients. However, in healthcare services, besides doctors who can remotely provide consultation, other personnel participate such as nurses, medical, and doctor's assistants. This stuff telemedicine is hard to replace (17).

Health facilities need to collaborate with health systems on a local, regional level. Constructive sharing of information, making policies, and designing a regional framework that supports a consistent level of care must be prioritized (18).

One of the possibilities is that the healthcare system establishes incident command 18. By using proven principles of incident action planning and the concept of providing standards of care in crisis (18,19), hospitals can plan in advance volume-based adjustment to deliver the necessary care at all levels, balancing demands and prioritizing resources on acute healthcare (18,20).

Moreover, hospitals could significantly increase access to testing in conjunction with public health measures, through commercial and public health laboratories. Definitely what we want to prevent is that a large number of patients seek care at hospitals and expose themselves to infection. Rapidly done testing and triaging patients are of the utmost importance. Testing doctors and health care workers can maybe have even greater importance as regular testing is the only way to ensure safe practice (18). Public health officials have great pressure on the shoulders to make specific criteria for testing. These strict criteria to a certain extent can prevent overwhelming health care facilities with patients and prevent unnecessary exposure to non-infected patients (18). To ensure this, officials in charge of the crisis have to maintain clear and trustful communication with the public.

Pandemic effects on non-COVID-19 patients

The current pandemic caused by SARS-cov-2 focused all medical attention and power on treating infected with this virus and contain further spreading. However, we must not forget that out there are patients with non-COVID-19-related diseases (21). Medical practice changed dramatically literally overnight. All elective medical procedures, surgeries are postponed to further notice. When that further notice will be is the most important question. We must protect and non-coronavirus infected patients. Surgeries need to run, haemodialysis, cancer treatment.

Cancer care often requires immunosuppressive therapy, resection of the tumour, treatment in hospital. Nowadays, there is a question of how to treat vulnerable groups of patients without exposing them to unnecessary risks. Is it even possible to provide necessary care without an increased risk of contracting the virus? Many treatment protocols are currently under revision. For example, although patients with low-grade lymphoma usually receive maintenance therapy, now it will not be recommended. These patients need in-patient treatment, office visits which could lead to even more immunosuppression and makes them more prone to contracting the virus. As this is a highly vulnerable group, there is a high risk of undesired outcome (21).

In addition, patients with solid tumours such as breast, colorectal cancer receive chemotherapy before instead after surgery. This change of protocol has arisen due to the cancellation of elective surgeries (21).

Medical insurance in pandemic

This pandemic represents “economic shock” which has repercussions on many levels. This “shock” shackled normal function of markets leading to broader economic impact in terms of supply and demand (9,22). In the past disruption of the healthcare system in the US that had a significant impact on the economy was the implementation of healthcare policies such as Medicare. This policy system was prospective payment for inpatient care (22). In 1918 controlling the influenza virus was showed that controlling pandemic is the key to the recovery of economy (22). The current pandemic caused by the novel coronavirus emerged rapidly and globally, limiting the abilities of the healthcare sector and economy to cope with the downturn and absorb the shock (22).

Another issue is that firms that offered employees high-deductible health-insurance plans discouraged people from accessing healthcare because people need a higher amount of out-of-pocket payments. Benefits from this during pandemic increased from 5% to 30% 23,24. These plans can make financial constrain even for people who have continued coverage (23).

COVID-19 pandemics have the potential to shift a considerable proportion of US citizens to Medicaid from employer-based private insurance, as Medicaid has lower reimbursement per patient (24). It is vital to provide universal health coverage to US citizens which due to pandemic will probably lose employer-sponsored health coverage. The Medical Crisis Program Act could guarantee health coverage and limit in short-term out-of-pocket expenses (25). However, this is only temporary. We must find the insurance coverage that can be sustainable.

The health insurance program created after the 9/11 terrorist attack implemented temporary public health coverage, similar to the Disaster Relief Medicaid program (DRM). DRM allowed residents of New York to quickly assess Medicaid advantages by just simply filling few papers. This insurance program provided coverage for four months after the attack emergency insurance and help after that period to other types of insurance. Considering the current situation and that the US is the most affected by the pandemic, a similar program would be significantly helpful and provide US society safety in emergencies and prevent high out-of-pocket payments (26).

Approximately over half of Americans who have had employer-sponsored health coverage had postponed recommended treatment for family members of themselves due to costs, before the outbreak of coronavirus. Pandemic leads to loss of jobs for more than 44 million Americans. Loss of jobs, reduced or lost income substantially increased healthcare costs. This is one of the main challenges in American society. In the survey conducted recently, 68% of adults said that out-of-pocket money plays an important role to decide whether to seek medical care in case they have symptoms of COVID-19 or not (27). This should not be tolerable in modern society. Universal health coverage must be a basic human right. We all deserve to get the highest standards of care in any situation, regardless there is an outbreak of the lethal virus outside or not. If we let patients do not get tested and get treatment due to cost harms, it will only prolong unprecedented pandemic, increase morbidity and mortality, and put even more pressure on the devastated economy.

II. Conclusion

This pandemic of the novel coronavirus showed that we as a society are not ready to cope with global threats. The sudden outbreak and then declaring pandemic penetrated in all pores in our society, health care system, economy, tourism, export and import of goods, closing borders, etc. Global threats left devastating global consequences, and we were not ready. However, we need to find solutions do recover our healthcare system and economy, as these are the most affected. The government needs to promote new types of medical insurance and provide healthcare for all, supply hospitals with the necessary equipment, and increase capacities not only for COVID-19 patients but also for patients who are not infected. International solidarity and collaboration have never been more important than now. Nowadays, after a few months of the declared pandemic, people are trying to adapt to new normal, feeling the consequences of the first wave.

References

- [1]. Miller TR, Radcliff TA. Economic Shocks From the Novel Coronavirus Disease 2019 Pandemic for Anesthesiologists and Their Practices. *Anesthesia and Analgesia*. 2020 Apr 20.
- [2]. Schröder I. COVID-19: A Risk Assessment Perspective. *ACS Chemical Health & Safety*. 2020 May 14.
- [3]. Taylor LH, Latham SM, Woolhouse ME. Risk factors for human disease emergence. *Philosophical Transactions of the Royal Society of London. Series B: Biological Sciences*. 2001 Jul 29;356(1411):983-9.
- [4]. Montgomery RA, Macdonald DW. COVID-19, Health, Conservation, and Shared Wellbeing: Details Matter. *Trends in Ecology & Evolution*. 2020 Jun 4.

- [5]. Bramanti B, Stenseth NC, Walløe L, Lei X. Plague: A disease which changed the path of human civilization. In *Yersinia pestis: retrospective and perspective 2016* (pp. 1-26). Springer, Dordrecht.
- [6]. Macdonald DW, Laurenson MK. Infectious disease: inextricable linkages between human and ecosystem health. *Biological Conservation*. 2006 Aug;131(2):143.
- [7]. Cantlay JC, Ingram DJ, Meredith AL. A review of zoonotic infection risks associated with the wild meat trade in Malaysia. *EcoHealth*. 2017 Jun 1;14(2):361-88.
- [8]. Jones KE, Patel NG, Levy MA, Storeygard A, Balk D, Gittleman JL, Daszak P. Global trends in emerging infectious diseases. *Nature*. 2008 Feb;451(7181):990-3.
- [9]. Nicola M, Alsafi Z, Sohrabi C, Kerwan A, Al-Jabir A, Iosifidis C, Agha M, Agha R. The socio-economic implications of the coronavirus and COVID-19 pandemic: a review. *International Journal of Surgery*. 2020 Apr 17.
- [10]. Tanne JH, Hayasaki E, Zastrow M, Pulla P, Smith P, Rada AG. Covid-19: how doctors and healthcare systems are tackling coronavirus worldwide. *Bmj*. 2020 Mar 18;368.
- [11]. Goodell JW. COVID-19 and finance: Agendas for future research. *Finance Research Letters*. 2020 Jul;35:101512.
- [12]. Nicola M, O'Neill N, Sohrabi C, Khan M, Agha M, Agha R. Evidence Based Management Guideline for the COVID-19 Pandemic-Review.
- [13]. Tabish SA. The COVID-19 pandemic: Emerging perspectives and future trends. *Journal of Public Health Research*. 2020 Jun 4;9(1).
- [14]. Kirk CP, Rifkin LS. I'll Trade You Diamonds for Toilet Paper: Consumer Reacting, Coping and Adapting Behaviors in the COVID-19 Pandemic. *Journal of Business Research*. 2020 May 21.
- [15]. Zeng Z, Chen PJ, Lew AA. From high-touch to high-tech: COVID-19 drives robotics adoption. *Tourism Geographies*. 2020 May 7:1-1.
- [16]. Keesara S, Jonas A, Schulman K. Covid-19 and health care's digital revolution. *New England Journal of Medicine*. 2020 Jun 4;382(23):e82.
- [17]. Hollander JE, Carr BG. Virtually perfect? Telemedicine for COVID-19. *New England Journal of Medicine*. 2020 Apr 30;382(18):1679-81.
- [18]. Hick JL, Biddinger PD. Novel coronavirus and old lessons—preparing the health system for the pandemic. *New England Journal of Medicine*. 2020 May 14;382(20):e55.
- [19]. Institute of Medicine. Crisis standards of care: a systems framework for catastrophic disaster response: Vol. 1: Introduction and CSC framework. Washington, DC: National Academies Press, 2012..
- [20]. Hick JL, Hanfling D, Wynia MK, Pavia AT. Duty to plan: health care, crisis standards of care, and novel coronavirus SARS-CoV-2. *NAM Perspectives*. 2020 Mar 5.
- [21]. Rosenbaum L. The untold toll—the pandemic's effects on patients without Covid-19.
- [22]. Miller TR, Radcliff TA. Economic Shocks From the Novel Coronavirus Disease 2019 Pandemic for Anesthesiologists and Their Practices. *Anesthesia and Analgesia*. 2020 Apr 20.
- [23]. Teasdale B, Schulman KA. Are US Hospitals Still “Recession-proof”? *New England Journal of Medicine*. 2020 Jul 1.
- [24]. O'Brien E. Employers' benefits from workers' health insurance. *The Milbank Quarterly*. 2003 Mar;81(1):5-43.
- [25]. Community Health Centers and Covid-19 — Time for Congress to Act Sanjay Kishore, M.D., and Margaret Hayden, M.D., M.Phil.
- [26]. Gruber J, Sommers BD. Paying for medicaid—state budgets and the case for expansion in the time of coronavirus. *New England Journal of Medicine*. 2020 Mar 31.
- [27]. King JS. Covid-19 and the need for health care reform. *New England Journal of Medicine*. 2020 Apr 17.

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