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Review Article

Virology

Response to Covid-19 Crisis: Recommendations and Health Policy Changes

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Abstract: The World Health Organization (WHO) declared the pandemic status of coronavirus disease of 2019 (COVID-19). The necessity for social distancing has prompted states to make policy changes. These policy changes are in line with the policies and recommendations set by the WHO, the Centers for Disease and Control Prevention (CDC), the United States Department of Health and Human Services (HHS), the Centers for Medicare and Medical Services (CMS), the Kaiser Permanente, the National Institutes of Health (NIH), the United States Food and Drug Administration (FDA), and the American Medical Association (AMA). The aim of this study is to discuss and analyze the effectiveness of many organizations in responding to the COVID-19 crisis. Three processes were involved in conducting the narrative review: (1) a search was conducted through the websites of eight organizations (CDC, HHS, CMS, Kaiser Permanente, NIH, WHO, FDA, and AMA), (2) Selection of relevant information related to the responses taken by the eight organizations between January 21, 2020 and April 24, 2020 were included, (3) the information selected from the websites of the eight organizations were recorded, summarized, and integrated in this paper.COVID-19 is a health problem that needs to be approached in a collaborative manner. All eight organizations that have taken action against the further spread of the virus. The different policy changes and/or recommendations from the eight organizations have one common ground and that is the necessity for social distancing. To prevent overcrowding in hospitals and in other healthcare facilities, the organizations have decided to expand telehealth coverage. In Conclusions Health-related and policy-issuing organizations provided policies that are aligned with one another in order to contain the spread of COVID-19.

Keywords: COVID-19, SARS-CoV-2, coronavirus, policy, recommendation, WHO

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1. INTRODUCTION

On December 29, 2019, a series of pneumonia cases of unknown cause was reported in Wuhan, one of China's most populated cities. Deep sequencing analysis from the lower respiratory tract of the affected patients revealed that the pneumonia was caused by a novel virus severe acute respiratory syndrome coronavirus-2 (SARS-CoV-2) or coronavirus disease 2019 (COVID-19).[1] In just a few months, the disease spread to other parts of the world. Substantial outbreaks were observed in Italy, the United States, and Iran beginning February 26, 2020.[2] However, it was only on March 11, 2020 that the WHO declared the pandemic status.[1] As of May 22, 2020, 5,269,965 people worldwide have tested positive for COVID-19. Moreover, 338,191 deaths have been reported globally. The United States accounts for the most number of positive cases and deaths with 1,638,760 and 97,377 respectively.[3] People infected with COVID-19 can experience mild to severe symptoms of respiratory illness, including breathing difficulty, cough and wheezing, fever, chills, sore throat, muscle pain, and loss of smell and/or taste. In rare cases, symptoms of diarrhea, nausea, and vomiting have also been observed.[4] According to the WHO, the virus primarily spreads through direct contact with an infected person. Apart from this, social distancing is also highly advised.[5] People are encouraged to stay at home and to avoid crowded and public places. The necessity for social distancing has prompted states to make policy changes.[6] These policy changes are in line with the recommendations set by the WHO, the Centers for Disease and Control Prevention (CDC), the United States Department of Health and Human Services (HHS), the Centers for Medicare and Medical Services (CMS), the Kaiser Permanente, the National Institutes of Health (NIH), the United States Food and Drug Administration (FDA), and the American Medical Association (AMA). Emphasizing communication, innovation, and collaboration with the health policy changes may help healthcare professionals and organizations to become informed. This is through having frontline evidence and information that promote unity effective response and implementation of recommendations and policies that help fighting against the pandemic.[7-9] Better understanding of recommendations and health policies changes related to COVID-19 will help healthcare professionals to ensure and increase their agility, learning, and resilience when facing similar future surprises of such events.[10,11] It is also important for the leaders within the healthcare organizations to better transform and position their organizations to unpredictable future surprises.[12] In addition, the responding healthcare organizations to the pandemic will not only assist to control the pandemic, but also ensure that they have not gone against the healthcare policies and their recommendations thus remaining positive in the pandemic fight.[13] Whether the event that emerges is a disaster or natural, reviewing the recommendations and healthcare policies will help the responding organizations to easily adjust with the complex healthcare systems such as medical practices, health systems, and hospitals which have heterogeneous, highly interdependence, dynamic with interacting units and agents. Healthcare has complicated science views.[9,14,15] Healthcare organizations may viewed as complex adaptive systems.[9,14,15] Many healthcare professionals and facilities operate in unpredictable and highly complex environments while providing healthcare services during COVID-19 pandemic.[9,15] There is a need to standardized the response to COVID-19 in order to control and reduce the spread of the virus and its negative consequences. Many organizations (i.e., WHO, CDC, HHS, CMS, Kaiser Permanente, NIH, FDA, and AMA) have responded to COVID-19 pandemic. It is critical to review the recommendations and health policy changes (during pandemic), so healthcare professionals and facilities may have insight and effective implementation of these recommendations and polices. The aim of this study is to discuss and analyze the effectiveness of these organizations in responding to the COVID-19 crisis.

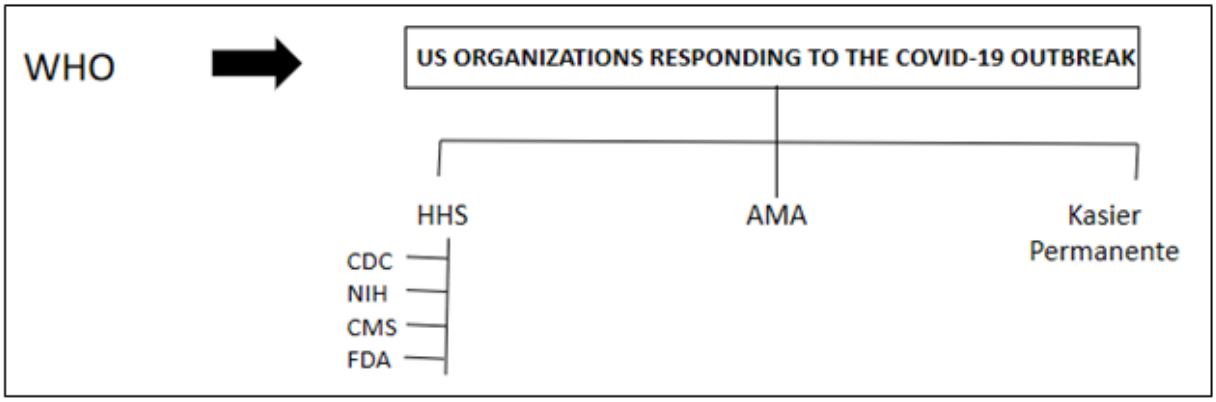
2. MATERIALS AND METHODS

The main purpose of this review is to identify how the major organizations in the United States have responded to the COVID-19 global pandemic. To do this, a narrative review was used as the methodology. It is a type of research methodology in which no specified search strategy is involved. Rather, only works relevant to the problem of interest in the paper are identified.[16] Three processes were involved in conducting the narrative review. In the first process, a search was conducted through the websites of eight organizations, namely: CDC, HHS, CMS, Kaiser Permanente, NIH, WHO, FDA, and AMA. The next process involved the selection of relevant information. Only the responses taken by the eight organizations between January 21, 2020 and April 24, 2020 were included. The last process focused on recording, summarizing, integrating the selected information (obtained from the websites of eight organizations) and writing the manuscript.

3. RESULTS

The United States is in the acceleration phase of the COVID-19 pandemic.[17] To lessen and hopefully stop COVID-19 spread, major organizations in the country and abroad are working together. These include both public and private organizations. The WHO is working with the different organizations in the United States to fight the outbreak of COVID-19. Figure 1 shows the eight organizations that have taken action against the further spread of the virus through the issuance of guidelines and recommendations to the different states.

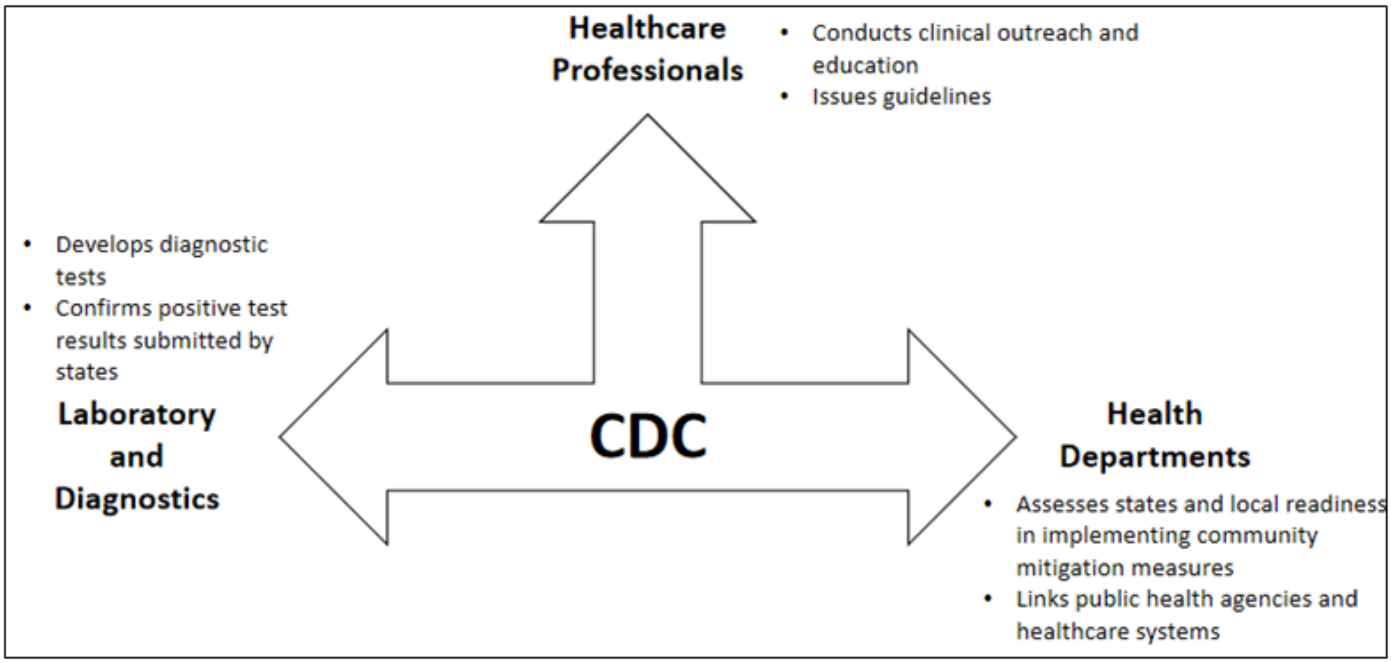
3.1 Centers for Disease and Control Prevention (CDC)



AMA: the American Medical Association, CDC: Disease and Control Prevention (CDC), CMS: the Centers for Medicare and Medical Services, COVID-19: Corona Virus Disease of 2019, FDA: Food and Drug Administration, HHS: the Department of Health and Human Services, NIH: the National Institutes of Health, WHO: World Health Organization.[18]

Fig 1. Organizations that have Taken Action against the Further Spread of COVID-19

The Centers for Disease Control and Prevention (CDC) is the leading public health institute of the United States. It is one of the major components of the HHS with the sole mission of protecting the country against national and foreign health, safety, and/or security threats.[18] In response to the global outbreak of COVID-19, the CDC has focused on preparing first responders, healthcare providers, and health systems. The CDC has produced guidance documents regarding infection control, hospital preparedness assessments, personal protective equipment supply planning, and clinical evaluation and management.[19] One of which explain the possible symptoms of the disease to guide physician testing and payer reimbursement policies.[4] Also, it has leveraged the existing telehealth tools to ensure that people continue to get the right level of healthcare for their specific medical needs.[19] Governmental agencies have issued guidance on early fills and updated policies in response to COVID-19. Figure 2 explains the changes and recommendations from the CDC as a federal agency focuses on strengthening the country's health systems in containing the spread of the virus.



CDC: Disease and Control Prevention (CDC), COVID-19: Corona Virus Disease of 2019.
**Information adapted from the CDC.[20]*

Fig 2. Actions of CDC against COVID-19 Outbreak*

3.2 The Department of Health and Human Services (HHS)

The Department of Health and Human Services (HHS) is a government department of the United States that is responsible for enhancing and protecting the health and well-being of all Americans.[21] To fulfill this, it provides effective health and human services and promotes advances in medicine, public health, and social services. At this time, the HHS has called on states to relax telehealth requirements

that may impede the affected response to the COVID-19 crisis. For instance, healthcare providers covered under the Health Insurance Portability and Accountability Act (HIPAA) of 1996 are allowed to provide telehealth services to patients through remote communication technologies, such as FaceTime and Facebook Messenger, for telehealth services. This is true even if these applications do not fully comply with the HIPAA rules. [22]

3.3 The Centers for Medicine & Medicaid Services (CMS)

The Centers for Medicine & Medicaid Services (CMS) is a federal agency within the HHS. It is tasked with the administration of Medicare and Medicaid programs.[23] In the wake of the COVID-19 outbreak, the CMS is taking action to protect the health and safety of both patients and healthcare providers. Particularly, it has expanded the list of covered telehealth services to include emergency department visits, home visits, therapy services, and initial nursing facility and discharge visits.[22] It has also released a COVID-19 telehealth toolkit to accelerate the use of telehealth in both Medicaid and Children's Health Insurance Programs. The toolkit guides the states in evaluating the need to expand telehealth capabilities and coverage policies, including but not limited to eligibility, reimbursement policies, and technology requirements.[24]

3.4 Kaiser Permanente

Kaiser Permanente is one of the country's largest not-for-profit health plans.[25] One of its notable actions in response to the COVID-19 crisis is free COVID-19 testing and diagnosis for its members. Moreover, members diagnosed with COVID-19 do not need to worry about the costs of additional services as they will be covered under their health plans.[26]

3.5 The National Institutes of Health (NIH)

The National Institutes of Health (NIH) is the medical research agency of the United States and is under the HHS. Its role is to make important discoveries related to health improvement.[27] To help battle the current global pandemic, NIH is supporting developing multiple vaccines and drugs to treat the viral disease.[28] Treatments for COVID-19 continue to be studied and there are treatments that have been investigated. However, there is still insufficient data for its recommendation (Table 1).[29]

Table 1. Recommended and not Recommended Treatment for COVID-19*

Recommendation	Not Recommended
• Remdesivir	• Hydroxychloroquine plus azithromycin
• Interleukin-6 inhibitors	• Lopinavir/Ritonavir or other HIV protease inhibitors
• Interleukin-1 inhibitors	• Interferons
• Convalescent plasma or hyperimmune immunoglobulin	• JAK inhibitors

Data adapted from the NIH[29]

3.6 The World Health Organization (WHO)

The World Health Organization (WHO) is a specialized agency of the United Nations that directs international health.[30] To stop the outbreak of COVID-19, it has launched Solidarity. It is an international clinical trial that aims to find an effective treatment for the disease. More specifically, four treatment options for COVID-19 will be compared. These are Remdesivir, Lopinavir/Ritonavir, Lopinavir/Ritonavir with Interferon beta-1a, and Chloroquine or Hydroxychloroquine. The participating countries for the clinical trial are Argentina, Bahrain, Canada, France, Iran, Norway, South Africa, Spain, Switzerland, and Thailand.[31]

3.7 The Food and Drug Administration (FDA)

The Food and Drug Administration (FDA) is the health product regulatory agency of the United States. It ensures that drugs, biological products, and medical devices are safe, effective, and secure. Also, it regulates the safety of the country's food supply, cosmetics, and products emitting radiation.[32] In line with its main responsibility, the FDA is engaged in numerous activities that accelerate the development of COVID-19 treatments. It has also issued guidelines for monitoring the products used for the treatment of the disease.[33] The FDA will play a very important role in the coming months as pharmaceutical companies are trying to develop vaccines to stop COVID-19 from affecting more people. As the regulatory agency of the government, it must ensure that vaccines or medicines are effectively safe for human use.

3.8 The American Medical Association (AMA)

The American Medical Association is the largest association of physicians in the United States. Physicians are at the forefront in the fight against the virus not only in hospitals but also in giving health access to those who are required to stay home. The members of AMA work together in promoting access to quality patient care. To address the effects of COVID-19, the AMA has released policy options for states. These include expanding telemedicine and/or Medicaid, removing barriers to patient care, bolstering physician staffing, and reducing patient out-of-pocket costs.[34]

4. DISCUSSION

The different policy changes and recommendations from the eight organizations have one common ground and that is the necessity for social distancing. To prevent overcrowding in hospitals and in other healthcare facilities, the organizations have decided to expand telehealth coverage. For example, insurers have expanded their coverage to include all types of telemedicine visits, including those made from home. Moreover, the HHS has temporarily allowed the use of consumer audio and video communication.[21] Video communication allows physicians to get a better look at their patients, although there is still no means of listening to a patient's heart and lungs, which is normally done when visiting in person. Because of these changes, a rapid increase in virtual visits during the outbreak of COVID-19 has been observed.[35] This increase has implications on the country's COVID-19 response.

4.1 Preservation of Resources

Resources in the medical field have become scarce. This is despite the fact the country is arguably one of the richest in the world. What this means is that the country is not ready to face a health problem like COVID-19. As a result, the need for protective resources has been highlighted. Everyone is required to wear protective gears, particularly those serving in hospitals and attending to the patients. Personal protective equipment (PPE), gloves, and surgical masks are essential for healthcare delivery. They protect healthcare professionals and their patients against potentially infectious patients and materials as well as potentially dangerous substances. However, the supplies for PPE and face masks have dwindled since the COVID-19 outbreak, which hinders the abilities of healthcare professionals from effectively responding to the crisis.[36,37] Telehealth expansion helps preserve these resources. Since there are fewer patients on site, healthcare professionals do not need to change their PPE and other medical essentials as frequently as they used to.[38] However, it would also be necessary to create additional resources because the problem remains and there is no telling how long the disease will infect the population. Moreover, when people stay home, the number of people who could become sick will lessen. This means that healthcare professionals will also not be overwhelmed.

4.2 Public Safety

Telehealth expansion is a helpful tool in containing the virus.[38] COVID-19 is easily spread from direct contact with an infected person. But since some people who have COVID-19 are asymptomatic or do not show symptoms of the disease, it is difficult to recognize who carries the virus. Limiting in-patient services helps reduce the risk of transmission.[39] Aside from this, there must be a better way to educate people about the threat of those who are asymptomatic. It appears that many people do not believe that this is a problem. Health agencies must continue to issue public statements concerning the importance of following protocols.

4.3 Criticisms

Although the role of telehealth expansion in response to the COVID-19 outbreak is indisputable, a strong infrastructure is required to support it. This means that organizations must act on how to update interfaces. It would also be better if there is a government-sponsored telehealth tool so that people can access it without having to spend money. At present, there is no single governmental platform being used by the health professionals in providing this type of service. This can become an opportunity for enterprising companies to provide platforms that may be expensive. If these tools are expensive, then, the cost would also become burdensome to people. Aside from this, patients and healthcare providers must be continuously educated about telehealth capabilities.[38] If the current problem continues for some period of time, it is necessary for the government and its relevant agencies to provide people with a more comprehensive response that includes educating them about alternative means in the access of healthcare services.

5. CONCLUSION

COVID-19 is a health problem that needs to be approached in a collaborative manner. This means that health-related and policy-issuing organizations must provide policies that are aligned with one another in order to contain the spread of COVID-19. They have issued their respective policy changes and recommendations. One commonality of their policy changes and recommendations is the necessity for social distancing. At the moment, the best response to the virus is to lessen the speed of its spread and this can be done by maintaining distance, which affects how people interact with medical professionals. In this line, organizations have been pushing for telehealth expansion. Its advantages include preserving the resources in the workforce and promoting public safety. The fight against COVID-19 continues, which means that the use of telehealth is expected to increase. Improvements to the system are recommended, especially with regard to interface upgrade and telehealth education.

6. AUTHORS CONTRIBUTION STATEMENT

Aseel Bin Sawad, Pharm D, MSc, MCR, MS, PhD, DBA designed the study, collected and analyzed the data, and wrote many sections of the manuscripts. Fatema Turkistani, Pharm. D, MSc, PhD, DBA collected part of the data and helped in the data synthesis, and wrote and revised many sections of the manuscript.

7. CONFLICT OF INTEREST

Conflict of interest declared none.

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