

**IMPACT OF COVID-19 PANDEMIC ON THE HEALTHCARE SYSTEM OF SAUDI ARABIA.  
A COMPREHENSIVE REVIEW.**

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**Abstract**

The COVID-19 pandemic has had a profound impact on several facets of life worldwide. The advent of this contagious ailment has hindered global cultures from adhering to their previous customary rules. To ensure our safety and the well-being of our loved ones, a vast number of healthcare facilities revamped themselves to cope with the magnanimous situation and thereby improved the facilities in their own capacity. The pandemic came as a wake up call to health establishments to be equipped with all the emergency supplies and manage the demand and supply if need arises. By conducting empirical research and analyzing data, we offer an in-depth examination of the healthcare measures implemented by the Kingdom of Saudi Arabia in response to the global epidemic.

**Keywords-** Covid-19, Pandemic, Healthcare

**Introduction**

Saudi Arabia, a prominent Arabian country, has 35.3 million persons living in 2.2 million square kilometers, has undergone significant threats in the recent past due to the COVID-19 pandemic. With the built-in infrastructure and disciplined lifestyle, the country successfully resolved this pandemic.

COVID-19 was a major threat to morbidity and mortality, health systems and broader social and economic wellbeing in Saudi Arabia. There is no doubt that preparedness and response efforts for COVID-19 outbreaks and the ongoing threat of transmission have had a significant impact on the healthcare system of Saudi Arabia. However, COVID-19 also provided an opportunity for health care sector to benefit from the capacity that has been built and lessons learnt during pandemic for the longterm management and control of other priority diseases, such as hepatitis B, hepatitis C, tuberculosis, diarrhoeal diseases, and vector-borne diseases.

Healthcare systems worldwide have been significantly impacted by the COVID-19 pandemic, and Saudi Arabia is not an exception. Saudi Arabia was among the first nations to implement effective measures to mitigate these dangers. The micro and macro levels discussed in the literature were determined by a series of applications and decisive measures of prevention, control, and specific treatments (Alonazi et al., 2021, Mahmood et al., 2021). Administrative preventive measures, policy modifications, and personnel transitions are critical concerns in public health and health risk adjustment. Undoubtedly, regulations and rules were expeditiously promulgated and revised via a novel framework for delivering healthcare services, which incorporated interconnected groups (Yang et al., 2020).

## **Literature review**

Although Saudi Arabia (KSA) has faced numerous obstacles as a result of this pandemic, it has been able to implement a number of preventative measures. Preventive measures encompass the establishment of healthcare centers dedicated exclusively to patients exhibiting symptoms of COVID-19, the provision of complimentary treatment and healthcare to all individuals, and the designation of fever clinics in both public and private hospitals across all locations (Salam et al., 2022).

Saudi Arabia, similar to numerous other global healthcare systems, promptly implemented precautionary protocols and health and safety measures in response to the pandemic. Nevertheless, certain systems within Saudi Arabia frequently encountered challenges in their efforts to mitigate the mortality and morbidity associated with COVID-19 within their respective populations (Mansour et al., 2021). In general, the success of healthcare policies, processes, content, and context in enhancing healthcare outcomes is influenced by a number of factors (Adly et al., 2020). Furthermore, Saudi Arabia was among the first nations to implement measures to mitigate the effects of COVID-19, well in advance of the initial case being reported. This was accomplished through the implementation of early precautionary measures derived from previous epidemics,

including severe acute respiratory syndrome (SARS) and Middle East respiratory syndrome (MERS), both of which are classified as coronaviruses.

### **Health Policy Analysis Model**

When choosing an approach to analyze healthcare policies from among the vast array of models and theories, it is crucial to specify the domains that contribute ingeniously to mitigating the phenomena' repercussions. For instance, the foundation of this model ought to be the research objectives and the data accessibility specific to a given context. In order to thoroughly examine the Saudi healthcare policy, it is necessary to conduct an exhaustive investigation of numerous factors and components. Considered by many to be the most applicable, dependable, and legitimate framework in this particular instance is Walt and Gilson's healthcare policy triangle (Walt et al., 1994). By providing an explanation of the macro level of healthcare policy and any other pertinent politics, this framework proves to be especially beneficial. In essence, this triangular framework comprises the following: content, context, and process—an examination of the ways in which direct influencers affect policy formation.

The triangular framework for healthcare policy developed by Walt and Gilson is widely regarded as a valuable instrument for examining healthcare policy systems on account of its robustness and consistency (Obrien et al., 2020). The healthcare policy management of COVID-19 is influenced by political, economic, and sociocultural contexts; this is elucidated via a meticulously designed control policy process comprising implementation, monitoring, and evaluation. Undoubtedly, this model facilitates a more impartial examination of prior healthcare policies and delineates a coherent structure by which policy formulation can achieve integration by considering actors, processes, context, and content (Lehmann et al., 2013).

Throughout COVID-19, these protocols were the most influential contributors to the development of the present medical guidelines. A sequence of steps is required to document the transition of particular actions from a research prototype to implementation in a healthcare system. Every day, experimental outcomes from the healthcare industry are accessible. Although context is commonly linked to obstacles or limitations that can influence or impede healthcare outcomes, there are situations in which it can signify success or failure. Although content is correlated with variation, approaching sources with diverse foundations is essential (Algassi et al., 2020).

### **Risk Adjusted Model**

A crucial component of health risk adjustment is the maintenance of services during routine operations; this may involve ongoing surveillance to ensure the provision of secure and efficient healthcare services. It is a reflection of the system's ability to continue delivering fundamental and sophisticated medical services in the face of a crisis, contingent on the healthcare leadership's implementation of effective measures. When assessing adjusted risks, health economics and statistics are frequently employed instruments. To reduce health risks, daily patient reports utilizing monitoring structure, processes, and outcome activities are typical. Typically, this is

linked to economic factors such as cost-benefit analyses. Although the healthcare systems in Saudi Arabia (KSA) are heterogeneous, the Ministry of Health (MOH) oversees, regulates, and manages them all as the country's primary healthcare provider.

Healthcare policies established by legislators, economists, and healthcare administrators do, in fact, impede efforts to reduce the catastrophic effects of COVID-19 on healthcare systems through collaboration. The objective of this research is to employ Walt and Gilson's policy triangular model to examine healthcare policies pertaining to COVID-19 management in the Kingdom of Saudi Arabia, encompassing both macro and micro levels.

### **Health Guidelines**

Health guidelines encompass both the written record and the execution of protocols aimed at mitigating hazards within a given community. A significant theme that surfaced from the semistructured interview data pertained to health guidelines. The analysis revealed the comprehension and perspectives of knowledgeable healthcare professionals regarding the medical and non-medical guidelines that are well-supported. Irrespective of nationality, gender, or ethnic origin, patient access to healthcare services was a critical prerequisite for the development of guidelines. Additionally, public hospitals extended free medical care to immigrants and irregular residents without imposing any financial obligations on them. Healthcare policymakers were granted access to records and information necessary for monitoring vulnerable cases.

The capacity to safely, efficiently, and effectively resolve real-world issues is a fundamental requirement for the utilization of services (Larsen et al., 2014) . During the period of partial lockdown, for instance, numerous patients were unable to freely travel in order to be examined by a physician. Virtual clinics played a crucial role not only in geographically isolated regions but also in highly urbanized centers. Therefore the experience of virtual clinics could be helpful in any future medical calamities.

### **Utilizing Simulation Services (Telehealth/Telecommunication)**

The Saudi healthcare system implemented simulations (telecommunication methods) in education, specifically health institutions, as part of this strategic shift. This implementation has persisted since the conclusion of the pandemic. Furthermore, the development of novel paradigms has had an effect not only on healthcare service providers but also on the system's end-users.

### **Ensuring Continuity of Services**

This describes how healthcare organizations continue operations following a pandemic and in preparation for one. In fact, this will result in improved service continuity and a reduction in recovery time. A recovery plan is crucial for ensuring the effective delivery and management of healthcare services (Alonazi et al.,2017).

The Saudi healthcare system managed potential financial repercussions in a strategic manner while prioritizing patient needs. Medical services are provided at no cost, and an exemption from any financial obligations related to the COVID-19 pandemic has been granted to all individuals (citizens, non-citizens, and illegal residents) (Jazieh et al., 2020).

Prospects for enhancing public health systems notwithstanding the adverse consequences of the pandemic, prospective prospects abound for enhancing public health infrastructure. Significant financial resources have been allocated towards the improvement of public health systems, and valuable insights have been gained regarding the ways in which these systems can be improved further (Alakhrass et al., 2021). Furthermore, the pandemic has brought to the forefront crucial concerns such as regulations governing information systems and digital technology, the management of scientific and statistical data, the provision of affordable and accessible health services, and the maintenance of robust public health capabilities, which includes a well-trained health workforce.

### **Building laboratory capacity**

Post pandemic there has been a rise in the number of laboratories to conduct confirmatory or surge testing for a variety of diseases. In light of the urgent requirement for prompt detection of SARS-CoV-2 cases, preliminary endeavors were undertaken in 2020 to augment laboratory capabilities via financial investments in laboratory apparatus and personnel training.

The broader capability and capacity strengthening that has taken place during the pandemic is bolstered by investments in lab personnel and technologies.

### **Building the capacity of health systems and the workforce**

With the intention of providing assistance to healthcare facilities during outbreaks, government and partners have deployed surge capacity. This has led to the deployment of surge personnel to assist with the day-to-day operations of the healthcare facilities and to educate hospital personnel in specialized areas (Alonazi et al., 2020). The enhancement of the public health workforce and healthcare facility personnel within the system will yield enduring benefits for the nation in the long run. Despite the fact that the pandemic has significantly strained health systems worldwide, investments in health systems have increased. Intensive care unit (ICU) and ward capacity have been increased, and hospitals have invested in the provision of ventilators and oxygen concentrators (Mahrous et al., 2020).

### **Discussion**

The healthcare system in Saudi Arabia plays a crucial role in ensuring the well-being of its population. With a growing population and increasing healthcare demands, it has become imperative to improve the healthcare system to meet the evolving needs of the people. Access to quality healthcare services is essential for the overall health and productivity of individuals, as

well as for the development and progress of the nation. In recent years, the Saudi government has made significant efforts to enhance the healthcare system by investing in infrastructure and implementing reforms. These improvements have led to increased accessibility to healthcare services, especially in rural areas where previously there were limited resources available. Additionally, the government has also focused on attracting and retaining skilled healthcare professionals to ensure the delivery of high-quality care. By prioritizing the improvement of the healthcare system, Saudi Arabia is not only improving the well-being of its population but also positioning itself as a global leader in healthcare.

Implementation of strict infection control measures in response to the challenges posed by the COVID-19 pandemic, healthcare systems have had to adapt their policies and regulations. The implementation of strict infection control measures has become paramount in order to prevent the spread of the virus within healthcare facilities. This includes measures such as increased hand hygiene, wearing personal protective equipment (PPE), and maintaining social distancing protocols. These changes have required healthcare professionals to undergo additional training and education to ensure compliance with the new guidelines. Furthermore, the pandemic has highlighted the need for improved healthcare policies and regulations to better address future public health emergencies. In addition, healthcare facilities have also implemented rigorous cleaning and disinfection protocols to minimize the risk of transmission. This includes regular cleaning of high-touch surfaces and using appropriate disinfectants that are effective against the virus. Furthermore, strict visitor restrictions have been put in place to limit the number of individuals entering healthcare facilities, reducing the potential for virus exposure. These measures have not only protected patients and healthcare workers but have also helped to prevent the overwhelming of healthcare systems during the peak of the pandemic. As a result, healthcare professionals have gained valuable experience in managing infectious diseases and are better equipped to handle future public health emergencies.

Introduction of telemedicine and remote consultations have also played a crucial role in managing the pandemic and ensuring continuity of care for patients. With the implementation of telemedicine, healthcare providers have been able to reach patients in the comfort of their own homes, reducing the risk of virus transmission in healthcare settings (Alanazi et al., 2020). This innovative approach has not only improved accessibility to healthcare services but has also allowed for timely medical consultations and follow-ups, especially for individuals with chronic conditions who require regular monitoring and treatment. Additionally, telemedicine has been particularly beneficial for individuals in remote or underserved areas, who may have limited access to healthcare facilities. By leveraging technology, healthcare professionals have been able to overcome geographical barriers and provide necessary medical care to these populations. Telemedicine has also proven to be cost-effective, as it eliminates the need for patients to travel long distances or take time off work for medical appointments. Moreover, it has empowered patients to take control of their own health by allowing them to easily communicate with healthcare providers, ask questions, and access important medical information. Overall, telemedicine has

revolutionized the healthcare industry by making healthcare more convenient, accessible, and patient-centered and this could be used for connecting rural population to urban medical facilities.

## **Recommendations**

Establishing more healthcare centers in rural areas to ensure that all individuals have access to quality healthcare. This can be achieved by investing in the development of infrastructure and medical facilities in these underserved regions. Additionally, implementing telemedicine programs can bridge the gap between rural communities and healthcare professionals, allowing patients to receive timely medical advice and treatment without the need for travel. Furthermore, offering incentives such as scholarships and training programs can attract and retain healthcare professionals in rural areas, addressing the shortage of workforce and ensuring that adequate healthcare services are available to all Saudi citizens.

Expanding telemedicine services to reach remote communities is a crucial step in improving healthcare accessibility. By utilizing technology and virtual consultations, healthcare providers can reach patients in remote areas who may otherwise struggle to access healthcare services. This can greatly improve the efficiency and effectiveness of healthcare delivery, as patients can receive timely medical advice and treatment from the comfort of their own homes. Additionally, telemedicine can help alleviate the burden on already overburdened healthcare facilities in urban areas, allowing for a more equitable distribution of resources and services across the country.

Implementing mobile healthcare units to provide medical services in underserved communities can also be an effective way to address healthcare disparities. These mobile units can bring essential healthcare services directly to the doorsteps of those who need it most, ensuring that no one is left behind in receiving quality care. By bringing medical professionals and resources directly to these communities, mobile healthcare units can help bridge the gap between healthcare access and underserved populations, ultimately improving health outcomes and reducing healthcare disparities. Additionally, these units can also serve as a means of preventive care, offering screenings, vaccinations, and health education to promote overall wellness within these communities. Overall, implementing mobile healthcare units can playunderserved regions

## **Other recommendations would be**

- Encouraging public-private partnerships for infrastructure improvement
- Expanding access to healthcare services through the construction of new medical facilities in underserved areas
- Upgrading existing healthcare facilities with state-of-the-art equipment and technology to enhance diagnostic and treatment capabilities
- Collaborating with private sector entities to leverage their expertise and resources in improving healthcare infrastructure

- Prioritizing the development of rural healthcare facilities to bridge the gap between urban and rural healthcare services
- Implementing telemedicine and telehealth initiatives to further extend healthcare services to remote areas
- Investing in research and development to identify innovative solutions for healthcare infrastructure improvement

## Conclusion

Despite the vaccination and healthcare efforts during the pandemic, the possibility of a recurrence of variant cases among the unvaccinated, as has been observed in numerous countries sporadically, may necessitate the continued utilization of the expanded capacity. Where this investment in health systems is not sustainable, a portion of the capacity may revert back to pre-pandemic levels. The progress achieved in various healthcare systems holds promise for enduring effects and enhanced health results in the country; nevertheless, investment in sustainable systems is imperative to perpetuate the positive effects. The government remains dedicated to ensuring that the public health authority maintains its focus on delivering sustainable services, technical assistance, and up-to-date regulations for the populace. This is achieved through the implementation of multisectoral collaboration and coordination mechanisms among diverse entities.

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