The Impact COVID-19 on the Healthcare Industry’s Systems and Policies: A Case Study

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The Impact COVID-19 on the Healthcare Industry’s Systems and Policies:  
A Case Study

A Dissertation
Presented to the Faculty of the
Department of Public Policy and Administration
West Chester University
West Chester, Pennsylvania

In Partial Fulfillment of the Requirements for the
Degree of
Doctor of Public Administration

By
Jameyshia S. Franklin

December 2023

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Dedication

I dedicate this dissertation to my two children, Liam, and Aliyah. Thank you for being my strength and my biggest cheerleader in completing this accomplishment. I also dedicate this dissertation to my family for supporting me through this journey. All praise and glory to God for giving me strength throughout my academic career.
Acknowledgements

I could not have undertaken this journey without the support and guidance of my advisor and Chair of my committee, Dr. Michelle Wade. A special thank you to my dissertation committee for their feedback and guidance. I would also like to extend my sincere thank you to my parents, family, and especially my children for being my motivation to continue this process and cheering me on along the way.
Abstract

People worldwide experienced some impacts from the 2019 Coronavirus at various degree. The healthcare industry worldwide was significantly affected by the high volume of patients being infected with the Coronavirus. The COVID-19 virus brought on several challenges for the healthcare industry and the federal government in the United States. Hospitals operated under severe circumstances to treat sick COVID-19 patients and keep their employees safe from contracting the disease. Government mandated social distancing, mask wearing, and cancelation and closing of services to assist with stopping the spread of the virus. This study aimed to identify how the pandemic affected the healthcare system and its policies through a qualitative analysis using a thematic framework. Healthcare professionals were interviewed in the data collection process to analyze the various ways the healthcare industry has been impacted by the pandemic. This study found several ways the healthcare industry had been impacted by the pandemic. Hospital and healthcare facilities were required to change their policies and focus attention saving lives. The abundance of misinformation from federal and local government created healthcare distrust from the community. These challenges that the healthcare industry faced execrated an already exhausted workforce which inedible created employee burnout and increase high turnover, and a cultural transformation in the healthcare industry. Findings from this study should be used to further study the long-term causes of the 2019 pandemic on the healthcare industry.

Keywords: healthcare, hospitals, Covid-19, pandemic, government, federal, state, policies, impact
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Chapter One: Introduction

The 2020 Coronavirus (COVID-19) Pandemic impacted people and society worldwide because of how quickly the virus spread throughout many countries. During the height of the pandemic, people contracted the virus became severely ill and countless people died from the virus or complications from the virus. The COVID-19 pandemic was a significant public health crisis that it caused countries and communities to complete shut down and mandate people to stay indoors in efforts to protect themselves. According to the Centers for Disease Control and Prevention (CDC), there has been 1,151,435 COVID-19 deaths from January 2020-October 28, 2023, in the United States (CDC, 2023). The fact the virus is still infecting people daily is one reason why it is important to understand how the pandemic has impacted the healthcare industry. Although the United States government has lifted mandates associated with mitigating the spread of the virus and COVID-19 is no longer considered a public health crisis, the Coronavirus is still influencing the healthcare system.

At the beginning of the pandemic and thereafter, there was no research on how pandemics have influenced the healthcare system and its industry. Much of the work being done during the pandemic was based on trial and error because there was no research available. This virus strand was new to society, government, and the healthcare industry and the infecting people rapidly that there was no time to research how it would impact people, society, government, and the healthcare industry. The importance of this study is to add to research currently being done on COVID-19 Pandemic at the government and healthcare industry level. This research can provide government and the hospitals with information on how to prepare for the next pandemic in future.
During the early stages of the pandemic and once it was announced as a pandemic and public health issues, the virus had significantly impacted the health of the most vulnerable populations, the government, economy, education system, businesses, and the healthcare industry. COVID-19 had forced many states to close businesses, schools, shut down its state, and mandated stay at home orders to reduce and stop the spread of the lethal virus. In comparison, not all fifty states in the United States were proactive in administering COVID-19 restrictions and waited until the virus infected a high rate of people before implementing emergency and public health mandates such as wearing mask, closing non-essential business, and mandating social distancing requirements.

The healthcare industry was one of the industries worldwide that had drastically been impacted by the outcome of the pandemic. Healthcare professionals worldwide had put their lives at risk to serve their communities by caring for sick patients and treating people who had tested positive for COVID-19. This pandemic exposed the under preparedness of the healthcare industry in responding to a major pandemic like COVID-19. While hospital and healthcare professionals worked tirelessly to treat COVID-19 patients and prevent the spread of the virus, the pandemic also drained the healthcare industry’s financial bottom line and had added unsurmountable amount of stress to its workforce. The inadequate staffing ratios, lack of equipment and resources, postponement of elective services, and visitor restrictions had all played a role in overburdening the healthcare system.

Understanding the impacts of the COVID-19 virus on the healthcare industry is important because there had not been a pandemic in over 100 years. The last documented pandemic was the 1918 Flu pandemic which had resulted in the advancement of influenza vaccines yearly. However, the COVID-19 virus was new and there was no known treatment developed to stop the
spread of the virus or precaution guidelines on how to reduce infection. Additionally, when the virus was identified as a significant safety threat, there was limited information, research, and data about the virus, how to cure or treat it, and how it would impact society. Hospitals and Health systems rely on research or best practices when implementing new treatment protocols, policies, and procedure to care for patients and its employees. The healthcare system rarely implements treatment, protocols, and policies without any research supporting the cause. Unfortunately, the healthcare system was subjected to use trial and error during the pandemic because there was limited research available.

As the pandemic continued to spread the healthcare industry, Public Health officials and federal/state/ local governments implemented protocols from experience with dealing with the 1918 Flu pandemic and pervious pandemics and using trial and error. Much of the information discovered about the spread of the Coronavirus was learned in the moment of treating patients and conducting contact tracings by government agencies such as the Departments of Health and Centers for Disease Control and Prevention. Although the COVID-19 virus is no longer a significant public health and government concern, there is limited research on how the pandemic has affected the healthcare industry from a financial, resource, and employee and clinician engagement perspective. Majority of the research available to date is about how to treat the virus, how the virus spread rapidly, and the medications and medicals procedures used to treat COVID-19 patients. This study can fill the gaps on how the pandemic had effect the healthcare industry’s resources, financials, employee engagement and provide additional research on this topic.

To analyze the effects of the Coronavirus in the healthcare industry in the United States, this case study examined how COVID-19 affected the healthcare system. Additionally, this study assessed the necessary steps hospitals and health systems took in the attempt to sustain hospital
operations without deviating from caring for patients. This case study addressed four research questions:

1. What measures have hospitals and health systems used to prevent the spread of COVID-19?
2. How did hospitals adapt to the impact of COVID-19 virus?
3. How did the COVID-19 affect the healthcare systems operations?
4. How hospitals and healthcare systems have adapted to the challenges of the Coronavirus.

It is important to study this topic because hospitals since the pandemic are experiencing substantial burnout and financial challenges since the start of the pandemic in January 2020. Hospital across the United States have had to permanently stop services, implement layoffs, and close hospital facilities. This study will provide valuable information for future research on the effects of COVID-19 on the healthcare industry. Government officials, healthcare leaders, and public health officials worldwide can use this research to support emergency preparedness practices and policies if there is another widespread pandemic in the future. Furthermore, this research can also be referenced for future public policy decisions by federal and local governments in the United States. Both federal and local government played a significant role in implementing public health policies and mandates in the United States. Overall, this study will enable the opportunity for more research to be administered to further understand the impact of COVID-19 on the United States healthcare industry and policies.
Chapter Two: Review of Literature

COVID-19 Hits Globally

History of Pandemics in America

Throughout history, there have been several pandemics that have crippled human civilization. A pandemic is defined as an epidemic that affects populations worldwide and internationally (Kelly, 2011). In contrast, an epidemic is a disease or virus that spreads from person to person rapidly but is not widespread (Dictionary, n.d.). Throughout the world, there have been numerous pandemics ranging in severity. The first recorded pandemic in history was the Antonine Plague in 165-180AD which was believed to be strains of smallpox or measles. This pandemic had the strength to affect the entire Roman Empire during Marcus Aurelius reign (Horgan, 2019). Figure 1. Outlines the history of pandemics in the world and its severity based on the number of deaths.
Figure 1 The Historical Timelines of Pandemics

<table>
<thead>
<tr>
<th>Name</th>
<th>Time period</th>
<th>Type / Pre-human host</th>
<th>Death toll</th>
</tr>
</thead>
<tbody>
<tr>
<td>Antonine Plague</td>
<td>165-180</td>
<td>Believed to be either smallpox or measles</td>
<td>5M</td>
</tr>
<tr>
<td>Japanese smallpox epidemic</td>
<td>735-737</td>
<td>Variola major virus</td>
<td>1M</td>
</tr>
<tr>
<td>Plague of Justinian</td>
<td>541-542</td>
<td>Yersinia pestis bacteria / Rats, fleas</td>
<td>30-50M</td>
</tr>
<tr>
<td>Black Death</td>
<td>1347-1351</td>
<td>Yersinia pestis bacteria / Rats, fleas</td>
<td>200M</td>
</tr>
<tr>
<td>New World Smallpox Outbreak</td>
<td>1520 onwards</td>
<td>Variola major virus</td>
<td>56M</td>
</tr>
<tr>
<td>Great Plague of London</td>
<td>1665</td>
<td>Yersinia pestis bacteria / Rats, fleas</td>
<td>100,000</td>
</tr>
<tr>
<td>Italian Plague</td>
<td>1629-1631</td>
<td>Yersinia pestis bacteria / Rats, fleas</td>
<td>1M</td>
</tr>
<tr>
<td>Cholera Pandemics 1-6</td>
<td>1817-1923</td>
<td>V. cholerae bacteria</td>
<td>1M</td>
</tr>
<tr>
<td>Third Plague</td>
<td>1885</td>
<td>Yersinia pestis bacteria / Rats, fleas</td>
<td>12M (China and India)</td>
</tr>
<tr>
<td>Yellow Fever</td>
<td>Late 1800s</td>
<td>Virus / Mosquitoes</td>
<td>100,000-150,000 (U.S.)</td>
</tr>
<tr>
<td>Russian Flu</td>
<td>1889-1890</td>
<td>Believed to be H2N2 (avian origin)</td>
<td>1M</td>
</tr>
<tr>
<td>Spanish Flu</td>
<td>1918-1919</td>
<td>H1N1 virus / Pigs</td>
<td>40-50M</td>
</tr>
<tr>
<td>Asian Flu</td>
<td>1957-1958</td>
<td>H2N2 virus</td>
<td>1.1M</td>
</tr>
<tr>
<td>Hong Kong Flu</td>
<td>1968-1970</td>
<td>H3N2 virus</td>
<td>1M</td>
</tr>
<tr>
<td>HIV/AIDS</td>
<td>1981-present</td>
<td>Virus / Chimpanzees</td>
<td>25-35M</td>
</tr>
<tr>
<td>Swine Flu</td>
<td>2009-2010</td>
<td>H1N1 virus / Pigs</td>
<td>200,000</td>
</tr>
<tr>
<td>SARS</td>
<td>2002-2003</td>
<td>Coronavirus / Bats, Civets</td>
<td>770</td>
</tr>
<tr>
<td>Ebola</td>
<td>2014-2016</td>
<td>Ebola virus / Wild animals</td>
<td>11,000</td>
</tr>
<tr>
<td>MERS</td>
<td>2015-Present</td>
<td>Coronavirus / Bats, camels</td>
<td>850</td>
</tr>
<tr>
<td>COVID-19</td>
<td>2019-Present</td>
<td>Coronavirus – Unknown (possibly pangolins)</td>
<td>4,700 (as of Mar 12, 2020)</td>
</tr>
</tbody>
</table>


The Spanish Flu, HIV/AIDS, Swine Flu, and Ebola are a few notable pandemics and have recently jolted society. The 1918 Spanish Flu (H1N1virus) was one of most significant and severe pandemics in the 20\textsuperscript{th} century, which resulted in millions of people being infected and dying from the virus. This flu virus infected 500 million people and caused over 50 million deaths worldwide (Centers for Disease Control and Prevention, [CDC], 2019). The Spanish Flu is recognized as the deadliest flu viruses in world because it had a high death rate in infecting
healthy individuals between the age of 15 to 34 years old (CDC, 2020). Fortunately, medical advancements such as vaccinations have helped to reduce the spread of the flu viruses.

**Medical Advancements to Reduce Infections**

From the time when the 1918 Spanish Flu hit, there have been significant improvements and public health preparations in the United States and worldwide in place to protect and mitigate the spread of a global pandemic. Improved sanitation practices for daily living including food preparation, personal protection equipment for healthcare workers, preventative medicine, and education have all contributed to the reduction of global pandemics. The evolution of medical education to better care patients and understand the human body has impacted how healthcare personnel treat infected patients. In the United States, the expansion of medical schools, the creation of the Centers for Medicare and Medicaid Services, formation of the National Institutes of Health, and growth of other medical professions and organizations have influenced the evolution of medical education (Ginzberg & Ebert, 2019).

Flu vaccinations and antiviral drugs have also contributed to the reduction of contagious diseases spreading. Influenza vaccines are updated annually are now recommended for children and adults annually (Jordan, 2020). Vaccinated individuals have the antibodies to kill the disease or bacteria in their bodies which reduces the infection and transmission of the disease to other people (Drexler, 2020). When an infectious outbreak does occur, public health officials implement other mechanisms to reduce the spread of infections. In the 14th century, quarantine practices were used to reduce the spread of infection was utilized to mitigate coastal cities from plague Epidemics (Lepan, 2015). This practice is still used today and has been effective in reducing the spread of COVID-19. In addition, cities shut down essential services, citizens were
quarantined, and health professionals worked to stop the spread of the disease (Stern, Cetron, & Markel, 2010).

**Coronavirus Pandemic Hits The US**

In the early months of the 2020 new year, the world got its first glimpse of a lethal health crisis that directly affected every individual living in the world. As it turns out, the world was facing another deadly pandemic that some believed was much greater than the Spanish flu that killed millions of people worldwide. In December of 2019, Wuhan, China had confirmed its first case of the Coronavirus (World Health Organization [WHO], n.d.).

On March 11, 2020, the World Health Organization (WHO) professed the Coronavirus as a world-wide pandemic. As of November 11, 2023, there have been 697,644,030 Coronavirus cases and 6,937,337 deaths worldwide (Worldometers, n.d.). The number of covid cases and deaths is continuing to increase as the infection rate is still on the rise since its onset. As of October 2023, there has been 1,151,435 COVID-19 deaths (CDC, 2023).

The virus has affected so many people at a rapid rate and on multiple levels that it will be categorized as one of the worst and aggressive pandemics in history. In an article published in *The New England Journal of Medicine*, COVID-19 virus has the strength to kill a health person and an elderly person at the same time (Gates, 2020). In contrast, people who had few comorbidities and risk factors were less likely to die from contracting the COVID-19 virus. The direct impact of the virus spans from those contracting the virus to individuals having to stay home and social distance themselves from their loved ones to losing their job and/or working from home.

At the height of the pandemic, there was no vaccine available to reduce the spread and eradicate the virus quickly. As a result of the there not being a vaccine, the COVID-19 virus
caused havoc globally. People were required to stay indoors and social distance from family and friends, and their communities to reduce the chances of being infected by the virus. Childcare facilities such as daycares and schools closed to adhere to the social distancing mandates administered by the federal and local governments. As a result of childcare facilities being closed, parents had to find other means for childcare and often time, the option was for one parent to step away from the workforce or send a child with relatives if they could not find care. People who left the workforce, loss income and benefits, and some people lost their jobs due to production being halted. Job layoffs and temporary closures became a significant burden on people’s household income and the economy at large. The social distancing mandates impacted the mental health of people and children due to being forced indoors for long periods of time.

To respond to drastic spread of the virus, countries and communities were implementing mandates in effort to slow the spread of the virus. Bedford and colleagues (2020) stated “To respond to COVID-19, many countries were using a combination of containment and mitigation activities with the intention of delaying major surges of patients and leveling the demand for hospital beds, while protecting the most vulnerable from infection, including elderly people and those with comorbidities” (p.1016). In the United States, the CDC, implemented contact tracing, case investigation, and outbreak investigation lead by the states’ Department of Health to learn about how the virus was spreading swiftly (CDC, 2020).

Fortunately, scientists and researchers were able to quickly develop a vaccine. The quick development of the vaccine was because researchers were already investigating Coronaviruses (HHS, 2023). The pharmaceutical company Pfizer was the first to develop a COVID vaccine and soon after Moderna and Johnson and Johnson followed with their development of a vaccine. On December 11th, 2020, the Federal Drug Administration approved emergency use of the Pfizer-
BioNTech COVID-19 vaccine (U.S. Department of Health and Human Services, 2023). The COVID-19 vaccine was massive advancement in stopping the spread of the virus in the United States. Although this was a breakthrough for the United States government and healthcare institutions, the vaccine was not widely accepted by American. There were many conspiracy theories about the vaccine that the government and public health agencies had to develop vaccine campaigns to get some Americans to buy into the importance of the vaccine.

Mistrust within the medical field has been a long challenge for medical professionals and public health officials. Much of the mistrust is a result of historic events that have occurred in minorities and socially marginalized populations such as African Americans, Native Americans, and members of the LGBTQ community. Examples of an historic event that influenced distrust within the African American community, it the 1932-1972 Tuskegee Syphilis Study that was administer by the U.S. Public Health Service (Allen et al, 2022). During the Tuskegee Syphilis Study, participants in the study were misled and were not given treatment for syphilis. Allen and colleagues (2022) suggest “mistrust can be viewed as an adaptive, self-protective response to historical exploitation, even when it is not directly experienced” (P. 2). Mistrust in the healthcare field have impacted patient compliance of cancer screenings, HIV treatment in men, and other healthcare precautionary services and treatments (Benkert et al., 2019).

Coronavirus and Healthcare

Impact of COVID on The Healthcare Workforce

As the Coronavirus continued to spread, healthcare workers (HCW) had risked their lives every time they walk into a COVID-19 patient’s room. The CDC reported that healthcare employees were at a higher risk of contracting COVID-19 and could increase the spread of the virus (Centers for Disease Control and Prevention, 2020). According to the World Health
Organization, healthcare workers are defined as “all people engaged in actions whose primary intent is to enhance health” (The World Health Report, 2006). The definition of healthcare workers includes physicians, nurses, allied health professionals, and ancillary employees such as housekeepers and transport personnel. The universal health workforce is comprised of approximately 59 million workers (The World Health Report, 2006). Figure 2 outline the global health workforce by density which shows health service providers represent 67% of the healthcare workforce. In the United States, there are 1.2 million physicians and 2 million certified nurse’s working in the hospital setting (Ehrlich, McKenney, & Elkbuli, 2020).

According to recent statistics from the U.S. Bureau of Labor, healthcare accounts for 9.3% of the workforce in the United States and there is 14.7 million people working in the healthcare field (United States Department of Labor, 2023).

Figure 2 Global Health Workforce by Density

<table>
<thead>
<tr>
<th>WHO region</th>
<th>Total health workforce</th>
<th>Density (per 1000 population)</th>
<th>Health service providers</th>
<th>Percentage of total health workforce</th>
<th>Health management and support workers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Africa</td>
<td>1 640 000</td>
<td>2.3</td>
<td>1 360 000</td>
<td>83</td>
<td>280 000</td>
</tr>
<tr>
<td>Eastern Mediterranean</td>
<td>2 100 000</td>
<td>4.0</td>
<td>1 580 000</td>
<td>75</td>
<td>520 000</td>
</tr>
<tr>
<td>South-East Asia</td>
<td>7 040 000</td>
<td>4.3</td>
<td>4 730 000</td>
<td>67</td>
<td>2 300 000</td>
</tr>
<tr>
<td>Western Pacific</td>
<td>10 070 000</td>
<td>5.8</td>
<td>7 810 000</td>
<td>78</td>
<td>2 260 000</td>
</tr>
<tr>
<td>Europe</td>
<td>16 630 000</td>
<td>18.9</td>
<td>11 540 000</td>
<td>69</td>
<td>5 090 000</td>
</tr>
<tr>
<td>Americas</td>
<td>21 740 000</td>
<td>24.8</td>
<td>12 460 000</td>
<td>57</td>
<td>9 280 000</td>
</tr>
<tr>
<td>World</td>
<td>59 220 000</td>
<td>9.3</td>
<td>39 470 000</td>
<td>67</td>
<td>19 750 000</td>
</tr>
</tbody>
</table>


**Healthcare Workers at Risk for COVID-19**

When the pandemic first hit the doorsteps of hospitals, little was known about how infectious the virus was. The lack of knowledge about the virus and the shortage of personal protection equipment (PPE) such as gloves, N95 mask, medical gowns, and eye protection was contributed to the risk of healthcare professionals being infected with COVID-19. The United
States Occupational Safety and Health Administration (OSHA) had noted, healthcare workers were at a high risk of exposure to COVID-19 and should wear OSHA approved PPE (Occupational Safety and Health Administration, [OSHA], n.d.). Healthcare employees were advised to take special precautions while in the healthcare setting to reduce the chance of being infected by the virus and spreading it to other HCW (Xiao, Luo, and Xiao, 2020).

In 2020, hospitals and healthcare facilities were unsure as to how many of their employees had contracted the virus due to patient interactions. Early in the pandemic, there were approximately 3,607 healthcare workers who had died because of contracting COVID-19 (ASPE, 2022). HCW who worked in hospitals and cared for patients during the pandemic were three times more likely to be infected by the virus (ASPE, 2022). As healthcare facilities and hospitals in the United States reported their COVID-19 exposures, it was believed that healthcare worker COVID-19 exposure cases were on the rise. In 2020, the number of healthcare professionals confirmed infected by the Coronavirus was over 800 cases (Ehrlich, McKenney, & Elkbuli, 2020). As the number of healthcare workers contracting COVID-19 increased, the mortality rate also increased. In an article published by Becker’s Hospital Review, there had been approximately 1,000 HCW deaths as result of the virus (Gooch, 2020). In an updated study, the World Health Organization estimated there was approximately 80,000 to 180,000 healthcare worker deaths due to COVID-19 from January 2020 to May 2021 (World Health Organization, 2021).

**The Pandemic Adds More Stress to Healthcare Workers**

Katie Owens, CEO of the Healthcare Experience Foundations stated, “In healthcare we train for emergencies, we practice drills, tasks, and incident command system protocols, we have not adequately prepared our workforce for COVID-19” (Owens, 2020). Healthcare workers were
at the forefront of the pandemic and had witnessed the devastating effects of the virus. The effects of the virus brought work-related stressors such as unhealthy work conditions, understaffing of patient units and departments, limited personal protective equipment and medical supplies and equipment, and the risk of being infected (Mercado et al., 2022).

HCW were fearful of their co-workers, families and friends, their communities being infected by the virus (Ehrlich, McKenney, and Elkbuli, 2020). The fear of being infected with the SARS-CoV2 while caring for patients was a significant stressor for healthcare personnel. HCW who were older and had pre-existing conditions were at a greater risk of becoming infected by the virus (ASPE, 2022). Caring for a high number of critically ill patients on a consistent basis is a known stressor for healthcare workers. One research study published in the *Journal of Public Health* (2020) states, “known factors contributing to the high risk of job burnout include intensive patient care, high mortality rate, and inappropriate job conditions in terms of high workload coupled with the lack of time to adequately address the patient’s needs” (p. 532). A recent study noted, depression and suicide are more prevalent among physicians, nurses, and medical students (ASPE, 2022).

HCW experienced job burnout, mental pressure, anxiety, and depression during an infectious outbreak (Lancee, Maunder, and Goldbloom, 2008). Additionally, post-traumatic stress disorder is common in survivors of contagious diseases (Hong et al., 2009). A recent study noted that there was a high rate of anxiety (24.94%), depression (24.83%), and sleep disorders (44.03%) in healthcare workers during the pandemic (Leo et al., 2021). Healthcare workers who have experienced quarantine, cared for a surge of COVID-19 patients, or had someone close to them infected by the virus were at a higher risk of being diagnosed with post-traumatic stress disorder symptoms (Xiao, Luo, &Xiao, 2020). HCW are experiencing substantial amounts of life
threatening situations, infection exposures, and shift overload and changes within the workforce than ever before (Leo et al., 2021). Burnout reduces an individual’s quality of life and can cause other health issues. In the healthcare setting, burnout can be attributed to increased medical errors and the quality of healthcare service (Talaee et al., 2020). Prior to the pandemic, hospitals were reporting burnout and staffing concerns and challenges to recruit clinicians; the pandemic was going to make these issues worse and deter people from entering the healthcare field (ASPE, 2022).

*Demand for Supplies*

As COVID-19 patients entered the Emergency Departments of hospitals in the United States, the American healthcare industry quickly recognized it did not have enough adequate supplies to protect its providers, clinicians, and front-line staff. To address the issue of low and unsustainable amounts of supplies, most hospitals leaned on their supply chain departments to purchase, inventory, and distribute supplies throughout their facility. Supply chain refers to the process in which an organization procures materials, assembles the product for usage, and distributes the materials or products to the end user (Pradham, 2012). The primary goal of the hospital supply chain is to provide medical supplies in a timely manner. The supply chain department provides hospitals with equipment on a large and small scale from face mask to ventilators machines.

Medical supplies are high ticket items on a hospital’s budget and are critical items needed to care for patients and keep employees safe. Thirty-eight percent of the supply chain cost is associated with medical equipment and supplies (Kim & Kwon, 2015). According to Navigant Consulting Firm, hospitals spend on average $25.4 billion a year on supply chain cost (Navigant,
n.d.). As COVID-19 brought an increase in patient volume to hospitals, the need for more equipment, supplies, and personal protection equipment became more evident. Health systems and hospitals had to think outside the box to secure adequate amounts of supplies.

As a result of healthcare organizations not being able to secure enough supplies to support the demand, many hospitals had to rely on group purchasing organizations and other nontraditional sources for products and assistance (Francis, 2020). Having to rely on nontraditional means to purchase supplies can be a significant risk to an organization. In many cases, hospitals had to purchase supplies from an unknown manufacture overseas and hope the supplies being sent were not counterfeit. Supply chain professionals are not equipped with administering international sourcing of products and their limited skill set can lead to risk of counterfeit, racketeering, and issues with foreign policies and customs guidelines (Francis, 2020). To ensure clinicians and front-line staff had enough supplies, hospitals, and nursing facilities; implemented supply control measures to be able to withstand the volume of COVID-19 positive patients. The lack of ample numbers of N95 mask for clinicians-initiated hospitals to develop contingency guidance on how to reuse masks designed for single use (Emanuel et al., 2020).

**Public Policy in Response to The Pandemic**

**Trump Administration**

While the hospitals were dealing with the high patient volume and limited resources because of the virus spreading rapidly, the Trump Administration was initiating public policies to assist with decreasing the spread of virus and providing resources to the American people. On January 31, 2020, President Trump declared a travel bans from China. To mitigate the spread the virus in the United States, the federal government administered several travels bans during the
beginning stages of the pandemic. One ban that was proclaimed in the earlier stages of the pandemic was the travel ban from China. The travel bans from China restricted immigrants and nonimmigrants who were present in China from entering the United States (Trump, 2020). Immigrants from China were seen as a risk to transmitting the virus, and Homeland Security and Security of State were tasked with upholding this policy. Furthermore, the ban also required Americans who had been in China in the past 14 days prior from the pandemic being declared, would need to be screened and possibly quarantined upon arriving at American airports (Trump Declares Coronavirus a Public Health Emergency and Restricts Travel from China, 2020).

In addition to the travel bans to China and later Europe, the Secretary of Human and Human Services released a public health emergency on January 31, 2020 (Gostin, Hodge, Wiley, 2020). The issued public health emergency was enacted under the Public Health Service Act (PHSA). This policy provided funding, rapid development of testing, antiviral medication to treat Covid, and the development of Covid vaccines (Gostin, Hodge, Wiley, 2020). The public health emergency also allowed the government to provide American households with free COVID-19 tests kits. While the government declared public health emergencies, states were declaring emergencies and implementing policies to reduce the spread of the virus. Figure 3 shows fifty states declaring an emergency due to the rapid spread of the COVID-19 virus. Since the public health emergency for COVID-19 was initially declared, the United States government has upheld the Public Health Emergency (PHE) declaration for three years. On May 11, 2023, PHS declaration was expired because the COVID-19 pandemic was no longer a public health crisis. The virus was not considered a public health crisis anymore because a vaccine was made available, and less people were dying from the virus. Under the Biden Administration, the COVID-19 vaccine had continued to be campaigned to assist with eliminating the spread of the
virus. The Biden Administration had effectively administered the largest vaccine program in history (HHS, 2023).

Figure 3 State Declaration of Emergency in Response to Novel Coronavirus Disease 2019

Note: Presidential Powers and Response to Covid-19 by Lawrence O. Gostin, 2020

During declaration of the Public Health Emergency, President Trump professed a national emergency under the National Emergencies Act (Gostin, Hodge, Wiley, 2020). The National Emergencies Act is a federal law that sets forth guidelines on how the federal government should respond to emergency disasters (Ballotpedia, n.d.). Through the National Emergencies Act, healthcare systems were allowed to facilitate telemedicine and increase hospital capacity without violating federal laws (Gostin, Hodge & Wiley, 2020). Additionally, President Trump declared a national emergency through the Stafford Disaster Relief and
Emergency Assistance Act. The Stafford Act, “authorizes the president to provide financial and other assistance to state and local governments, private nonprofit organizations, and individuals to support response, recovery, and mitigation following declaration of an emergency or major disaster” (Public Health Emergency, 2017). This policy also allowed the federal government the responsibility to make mandates because of a national pandemic (Gostin, Hodge, Wiley, 2020).

While the federal and state governments were declaring emergencies, quarantine and sheltering in place protocols, and social distancing mandates across the United States, healthcare institutions and businesses were also implementing social distancing procedures. Many states mandated strict quarantine guidelines that prohibited large gatherings, dining in restaurants, and prohibited people from going in public places. States shelter in place orders were intended to reduce human interaction and mitigate the spread of the Covid-19 (Berry et al., 2021). California was the first state to order its citizens to stay at home (Gratz et al., 2021). Shortly after California implemented stay at home order, several other states followed California’s lead and outlined social distancing guidelines in public places and social gatherings. Following the social distancing orders, state governments were mandating the usage of mask wearing in public businesses and hospital facilities, and at the federal level, Congress enacted laws to support businesses, public health, healthcare organizations and the education system.

**CARES ACT**

Under the Trump Administration, the United States Congress introduced the Coronavirus Aide, Relief, and Economic Security Act (CARES Act) to aid American families, healthcare systems, and businesses who were impacted by the pandemic. The CARES Act offered $2.2 trillion in financial relief (U.S. Department of Education, 2022). This policy included a multitude of laws to assist American families, healthcare organizations, and small business that were
experiencing financial and resource challenges. Some of the policies that were implemented from the CARES Act included loan repayment programs, delayed tax repayments for small business, emergency use of laboratory tests, free Covid vaccine and Covid testing for Americans, supply chain enhancements to secure medical equipment, telehealth resources to increase access, temporary pause on federal student loans (S.3548, 2020). Throughout 2020 and 2021, the federal government approved several other policies to assist in overcoming challenges brought forth by the pandemic. These policies approved by the Senate and House Representatives included Safeguarding America’s First Responders Act of 2020, Family First Coronavirus Response Act, and Paycheck Protection Program and Health Care Enhancement Act.

*Safeguarding America’s First Responders Act of 2020*

The Safeguarding America’s First Responders Act of 2020 (SAFR) was created to provide first responders with disability and death benefits in the event they died because of COVID-19 (Congressional Research Service, 2020). At the beginning of the pandemic, adequate testing for the Coronavirus was not available to the public and hospitals. First responders were at a higher risk of contracting the virus because they were on the frontlines due to the role of interacting with the public for during emergency calls. First responders also did not have proper personal protection such as masks and gloves when responding to emergencies which increase their chances of contracting the Coronavirus.

According to the National Law Enforcement Memorial and Museum Annual report, there were 458 law enforcement officer deaths and of that number 301 deaths were a result of the Covid Virus in 2021 (National Law Enforcement Memorial and Museum, 2021). COVID-19 was listed as the leading cause of death of law enforcement officers and first responders. First responders who were in active duty during January 2020 through December 2021 were eligible
for the SAFR benefits (Congressional Research Service, 2020). Other eligibility requirements included medical documentation that the first responder died of COVID-19 or a complication from COVID-19, and there were no secondary causes of death (Congressional Research Service, 2020).

**Family First Coronavirus Response Act**

Within the CARES Act, there were several laws embedded in this policy. One of these laws was the Families First Coronavirus Response Act (FFCRA). The FFCRA was passed by Congress to require health insurance companies to provide free Coronavirus testing during the height of the pandemic (King, 2020). In addition, this policy provided funding for uninsured citizens to receive COVID-19 testing under the state funded Medicaid plans (King, 2020).

Under the FFCRA, there were two policies impacting Title I of the Family and Medical Leave Act (FMLA). These two policies were the Emergency Paid Sick Leave Act (EPSLA) and the Emergency Family and Medical Leave Expansion Act (EFMLEA). Both policies were enacted in April of 2020 and ended in December of 2020. EPSLA required employers to grant employees paid sick time for illness related to the coronavirus (Federal Register, 2020). The EFMLEA provided employees with paid sick leave or paid family leave in the event a person needed to stay home to care for their children due to the child not being able to attend school. Employees could receive an additional 10 weeks of paid leave at a rate of two-thirds the employee’s regular pay rate (Federal Register, 2020).

**Paycheck Protection Program and Healthcare Enhancement Act**

The Senate and House of Representatives approved another COVID-19 bill to relieve some of the burdens impacting Americans, healthcare organizations, and health providers. The bill provided $484 billion funding to supplement programs within the CARES Act, (American
Medical Association, 2020). This bill provided paycheck protection, disaster loans, grants to hospitals and healthcare providers, and COVID-19 testing. Through the healthcare and provider grant programs, there was $75 billion to assist in revenue lost due to the pandemic and $25 billion to increase COVID-19 testing and research (American Medical Association, 2020). With this policy states were allowed to develop COVID-19 testing programs and mitigation plans to reduce some of the burden of the pandemic.

The policy required states to submit COVID-19 testing data to the government that included demographic information such as race, age, sex, and ethnicity (American Medical Association, 2020). This was one strategy for government agencies to analysis which populations were more prone to contracting the virus. With this data, the government was able to provide $825 million to community health centers and rural health agencies to provide testing (American Medical Association, 2020). This policy increased COVID-19 testing access for people who did not have health insurance. A billion dollars was provided to cover the cost of testing for the uninsured populations (American Medical Association, 2020).

**Pandemics Cost to The Healthcare Industry**

Many healthcare professionals and professional organizations argued that pandemics can have a significant financial burden on the healthcare system. It has been estimated that the influenza outbreak cost $500 billion a year (Bloom, Cadarette, and Sevilla, 2018). According to the CDC, there are approximately 139.0 million emergency room visits and 14.5 million hospital admissions per year in the United States (CDC, 2020). As the pandemic spread throughout the United States, there was a decline in emergency room visits and elective procedures. The drop-in emergency room visits are primary reflective of patients with severe and non-life threatening conditions being hesitant to utilize the emergency room out of fear of contracting COVID-19
(Jeffery et al., 2020). As the emergency room volume was declining, the number of COVID-19 admissions were increasing, causing hospital to go into a surge of intensive care unit (ICU) volume. New York City was seen in the media as the epic center for the Coronavirus. New York City reportedly had 55,000 patients hospitalized with a diagnosis of COVID-19 (Emanuel et al., 2020).

Many patients infected with COVID-19 were admitted to the Intensive Care Unit (ICU) and require ventilator treatment. Patients who had other underlining medical issues and were older had a greater risk of being hospitalized and needing ICU treatment for COVID-19. In the United States, there are approximately 96,596 ICU beds and 62,000 ventilators available (Bartsch et al., 2020). In New York City during the peak of the COVID-19 outbreak, NYC Health + Hospitals was treating 1,000 ICU patients (Uppal et al., 2020). Hospitals with limited ICU beds had to rely on other areas in their facilities to house ICU patients. Hospitals in areas where COVID-19 is considered a hot spot had to create innovative methods to handle the demand of COVID-19 patients requiring ventilator and ICU care. In New York, Queens Hospital transformed its rehabilitation gym into an intensive care unit to accommodate the demand of ICU patients (Uppal et al., 2020). In addition, New York- Presbyterian Weill Cornell Medical Center converted its operating rooms and post-anesthesia care units (PACUs) into critical care units for critically ill patients (Peters et al., 2020).

The inadequate amount of ICU beds was not the only challenge for hospitals. Patients with lack of health insurance or minimal insurance coverage also affected the hospital financials. Hospitals are paid less by noncommercial insurers such as Medicare and Medicaid. Medicare pays less than what other commercial insurance pays for the same diagnosis (Levitt, Lopez, and Schwartz, 2020).
To quantify the financial cost of the pandemic to hospitals, the American Hospital Association conducted a four-month analysis from March 1, 2020, to June 30, 2020; because of their analysis, American hospitals have lost $202.6 billion or $50.7 billion per month due to the pandemic (American Hospital Association, n.d.). The primary source of the financial loss to hospitals and health systems were associated with the need to suspend elective procedures, cost to treat hospitalized COVID-19 patients, and the added staffing needed for screening and caring for patients. In March of 2020, the Centers for Medicare and Medicaid Services (2020) advised hospitals and health systems to cancel all nonemergent elective surgeries and procedures. The cancelation of elective surgeries and procedures was a huge hit for many hospitals.

As hospitals and health systems continue to care for COVID-19 patients it will be important for them to navigate through the financial challenges of the pandemic. Unfortunately, the true impact COVID-19 has on the healthcare industry cannot be fully examined as the virus is still infecting many people globally to this day. The impact of the pandemic displayed healthcare vulnerabilities and affected every aspect of caring for patients (Land, 2020). Although there is a COVID-19 vaccine available in the United States, the spread of the COVID-19 virus continues to infect people, increase healthcare cost, and overburden healthcare workers.
Chapter Three: Data and Methods

Introduction

The goal of this case study is to examine how hospitals have been affected by the Coronavirus pandemic and how the virus has influenced hospitals system’s policies and operations. The purpose of conducting this case study is to add context and content for future research studies on the COVID-19 pandemic in the healthcare industry. Additionally, this study will be a resource for healthcare organizations and government officials to use in the event another pandemic occurs. Furthermore, this research will provide insight on the processes and policies hospitals were required to implement to remain viable and continue to care for COVID-19 patients. Lastly, the primary audience for this study are public policy and public health researchers interested in adding to the field of emergency preparedness, disaster planning, and healthcare policy. Chapter three of this case study will outline the methodology of this research.

Research Methodology

A qualitative methodology was selected for this research topic to gather information from subject experts who have experience working in the healthcare field during the COVID-19 pandemic. Hesse-Biber (2017) suggests qualitative methods are used to gather in-depth knowledge about a subject. The goal of this research is not to test a hypothesis like research done in quantitative methods, but rather to understand how the pandemic influenced certain practices and policies in healthcare. The goal of qualitative research is to explore subjective meaning (Hesse-Biber, 2017).

In addition, qualitative research allows for the interview questions to be open-ended as opposed to closed-ended in quantitative studies. This type of methodology is best suited for this study because it allows for adaptability of the research. Being that the Coronavirus is new and
there is limited research available, having flexibility in the research design allowed me to make
necessary changes as result of new information being published about the Coronavirus.

Using quantitative methodologies to investigate how the COVID-19 pandemic has
impacted the healthcare industries policies was not an appropriate method to use for this
research. Quantitative methods did not align with the goal of this research of explaining how the
healthcare industries had been impacted by the pandemic. Quantitative research is primarily used
to test or prove a hypothesis and explain why a situation or event happened.

**Research Design Questions**

To examine the impact of COVID-19 on the healthcare industry in the U.S., this
dissertation will answer four research questions:

RQ1. What measures have hospitals and health systems used to prevent the spread of
COVID-19?

RQ2. How did hospitals adapt to the impact of COVID-19 virus?

RQ3. How did the COVID-19 affect the healthcare systems operations?

RQ4. How have hospitals and healthcare systems adapted to the challenges of the
Coronavirus?

**Research Design**

The research design for this dissertation will consist of a qualitative case study on the
concepts of the Coronavirus pandemic, resource demands, stressors, COVID-19 surge, exposure
risks, and government policies.

**COVID-19 Pandemic**

On January 7, 2019, the Coronavirus (COVID-19) was first identified in Wuhan City,
China and was named SARS-CoV-2 (Barba et al., 2020). This virus has infected millions.
of people world-wide and has had a high mortality rate within the elderly population, especially those with chronic health conditions. The coronavirus shifted the workforce and the way people do business by forcing individuals to work from home, businesses to close, schools to provide education virtually, government to respond and implement swift policies, and the healthcare industry to limit certain services all to reduce the spread of the virus. In addition, the virus had restricted daily living activities such as going to the movies, participating in family gatherings, and other events most people enjoy doing in large groups.

**Resource Demands**

Resource demands variables are expressed as the lack of, or limited supply of items required to care for patients in the hospital setting. These items include supplies, equipment, personal protection equipment, patient care beds, medication, and personnel. As a result of a high demand for resources, medical resource allocation efforts were implemented to handle the severely ill COVID-19 patients. When resources are low and hard to come by, hospitals had developed resource rationing processes. Cao and Huang (2012) provide a framework for resource-rationing philosophies: first come-first serve, arbitrary, most severe, and least severe. This framework can be used to mitigate the potential for patients not receiving the proper and safe care as well as employee exposure risks to COVID-19 patients.

**COVID-19 Stressors**

For this study, Covid stressors are defined as social factors that affect an individual’s mental health and wellbeing because of the Coronavirus. These social factors consist of the shutting down of nonessential businesses, increased infections, shortages of supplies, loss of jobs, and increase Coronavirus patients in the hospitals. “The leading stressors of the Coronavirus are sensitivity of safety and threat of infection, lack of available and accurate
information, quarantine and confinement, stigma, and financial loss and job security” (Hamouche, p.4). Individuals working in the health field were more likely to deal with these stressors because of their involvement with caring for COVID-19 patients. These stressors had a negative impact on an individual’s wellbeing and mental health. Depression, anxiety, and suicide are the cause of people having extreme amounts of stress and worry. These stressors can affect healthcare workers and reduce the effectiveness of an organization.

COVID-19 Surge

As the pandemic hit the United States, government and healthcare officials were notified of the Coronavirus surge and the virus case load infected hundreds of people at a rapid rate. In healthcare, a medical surge is defined as “the ability to evaluate and care for a markedly increased volume of patients and challenges or exceeds normal operations capacity” (HHS, 2012). The Coronavirus surge variable is defined as volume in excess that causes the hospital to deploy additional unconventional resources to care for the high volume of patients. Primarily throughout several research studies the focus on the COVID-19 surge has been geared towards the Intensive Care Units (ICU) and limited research about the impact of the surge on other areas of the hospital. The COVID-19 Hospital Impact Model (CHIME) SIR Model can be used to predict the potential for a surge in hospitals and ICU (Crane-Droesch et al., 2020). This model was developed by the University of Pennsylvania hospital to predict the progression of the COVID-19 spread and its impact on the hospital. The CHIME SIR Model was only administered at three hospitals within the University of Pennsylvania Health System. As a result of the model being newly created and still being tested, it was not used at other facilities outside of the health system.

Exposure Risks
The exposure risk variable determines the probability of an asymptomatic or symptomatic infected person exposing a healthy person to the virus resulting in potential transmitting of the virus. This exposure risk can cause life threatening effects such as hospitalization, mortality, loss of work, loss of wages, and limited workforce. As a result of high exposure risks amongst individuals in close contact with infected individuals, contact tracing was developed to narrow down the source of infection and quarantine infected individuals. These exposure risks were identified by the CDC, state health departments, and hospital infection prevention experts. Exposure risks were used to drive the implementation of healthcare and public policies.

**Government Policies**

The government policy is a variable of policies that had been passed by government as a response to the Coronavirus pandemic. These policies provided a large range of resources for communities, citizens, businesses, and the healthcare industry. Policy resources range from financial support, supplies, and laws and often can be a combination of resources. The Coronavirus Aid, Relief, and Economic Security Act (CARES Act), 14-day Quarantine travel policy, travel restrictions, and mask wearing had all been implemented because of the pandemic. The CARES Act was established by the federal government to provide financial aid to those businesses who were financially impacted by the pandemic. This bill provided economic resources to American Citizens and healthcare providers.

Furthermore, this case study will be adopting a descriptive approach with the goal of building on future research of the Coronavirus pandemic. Qualitative research permits innovation when using a case study as the research design. Case studies are often utilized to bring a deeper meaning or understanding of an issue. Creswell, Hanson, Plano, & Morales (2007), claim “Many
case studies focus on an issue with the case (individual, multiple individuals, program, or activity) selected to provide insight into the issue” (p.240). Hesse-Biber (2017) agrees, case studies are comprehensive exploration of multiple perspectives on a complex issue of a policy, institution, or system. A case study is a feasible research design to use when exploring and describing the influences or impact of a real-life situation like the Coronavirus pandemic.

Case studies are appropriate research designs to use when evaluating healthcare industry and its policies. This type of study is prevalent in the field of applied sciences related to social science, education, and health (Queiros, Faria, & Almeida, 2017). Moreover, one of the strengths of using a case study is that it warrants the research to be focused directly on the case study topic (Hesse-Biber, 2017). Given that this research study gathered information from a small sample of respondents, a case study is most adequate for this research topic.

As stated before, qualitative research provides the ability to use in-depth interviews to collect more insightful information on the research topic. A case study is a qualitative approach that allows the researcher to capture profound information about a case or cases from multiple respondents or participants (Creswell et al., 2007). Research participants in this study had the opportunity to express their personal viewpoints on the coronavirus pandemics as it relates to the research questions. Hesse-Biber (2017) states, “In-depth interviews provide very rich information, and it offers the opportunity to ask follow-up questions, probe additional information, justify previous answers, and establish a connection between several topics” (p.106). Semi-structured in-depth interview questions was used in this study to allow for research participants to be interviewed using the same interview questions but allowing for there to be some variation in respondents answers.
**Population and Sample Selection**

Research participants for this case study were selected from various healthcare organizations that included, hospitals and healthcare consulting firms. Hospitals were included in this study because hospitals across the United States were the primary institutions involved in treating and caring for people infected with COVID-19. Healthcare organizations such as hospitals were also instrumental in administering the COVID-19 vaccines. Healthcare consulting firms were included in this study because they were working with hospitals and health systems during the pandemic and were potentially involved in assisting hospitals with their emergency preparedness procedures.

These organizations were in Southeastern Pennsylvania, Lansing, Michigan, and Chicago, Illinois. Healthcare organizations from the Midwest and Northeastern part of the United States were included in this study because the focus of this study was to investigate hospitals in the North. Furthermore, participants who responded to this study were currently working at healthcare organizations in the Midwest and Northeast. The hospital systems that were included in this study have services that include multiple physician practices and health centers that provide a broad range of healthcare services such has Orthopedic Surgery, Pediatric Care, Oncology Care, Primary Care, Substance Abuse, and Mental Health services, as well as Preventive Care. The healthcare consulting firm included in this research provides cost savings strategies and project management services to hospital and healthcare systems nationally.

Research participants were selected using convenience sampling. Convenience sampling is an appropriate sampling model for this case study because it allowed for the researcher to solicit participants easier and in a timelier manner. Convenience sampling is appropriate to use when the researcher is aiming to gather specialized information (Hesse-Biber, 2017).
In selecting participants for this study, participants were solicited from healthcare organizations that were working in healthcare from March 1, 2020, to May 1, 2021. Selecting participants from this timeframe is important because this was the timeframe of when the COVID-19 pandemic was most prominent in the United States. Soliciting for research participants was conducted through emails sent to healthcare employees which included information about the case study and a request to participate. To be included in this study, participants were selected to participate if they worked in the healthcare field during the pandemic and were in positions that were involved in the decision making of COVID-19 policies and procedures at their facility. To determine which individuals were involved in COVID-19 decision making at their facility, there current job titles were accessed to include them in the study. Individuals who were managers, directors, and/or executives participated in the implementation of policies and procedures during COVID-19. In the healthcare field, management and senior leaders are often the individuals who implement policies and procedures throughout the hospitals and healthcare organizations.

In addition, the goal of this study was to elicited information from individuals from various backgrounds based on race, age, and years of service in the healthcare field. This case study captured 10 participants that range in various healthcare roles. A sample size of 10 people was sufficient for this study because it will allow for a variation in interview responses and allow the researcher to gain more in-depth information on the research topic. Ultimately, this research study solicited information from individuals who work in healthcare and have had some impact in the planning and preparedness of the Coronavirus at their facility (See Table 1).
Table 1 Demographic Characteristics of The Participants

<table>
<thead>
<tr>
<th>Variables</th>
<th>Participant Background</th>
</tr>
</thead>
<tbody>
<tr>
<td>Participants</td>
<td>10 individuals from healthcare and hospital organizations</td>
</tr>
<tr>
<td>Occupation and Organization</td>
<td>Healthcare executive, physicians, directors, managers, nurses, practice Administrators, nonprofit organization, healthcare consulting, and hospitals</td>
</tr>
<tr>
<td>Geographic location</td>
<td>Suburban areas in Pennsylvania and urban areas in Chicago, IL and Lansing, MI</td>
</tr>
</tbody>
</table>

Individuals selected to participate in this case study were required to complete written informed consent before engaging in the research. Prior to the start of the interview, participants were provided a written document with information on the purpose of the study and the potential for the study to be published. Individuals participating in this case study were also be provided anonymity and all information exposing their identity was not included in this study unless written consent was provided. To select the sample participants for this dissertation, this study utilizes an inclusion and exclusion criteria. The inclusion and exclusion criteria are related to the participants involvement in the response to the Coronavirus pandemic. The inclusion and exclusion criteria are based on four elements. Individuals who did not meet the four study criteria were excluded from participating in the case study. The inclusion criteria included the follow parameters:

- Employment at the selected healthcare during March 1, 2020, to May 1, 2021
- Individual’s current profession
- Years of experience in healthcare
- Position in the healthcare field (must be in a manager or above role)
- Individual’s involvement in any Coronavirus planning at their job.

Role of The Researcher

As the researcher conducting this study, I had a collegial relationship with some of the participants that were recruited for this study. There were some participants recruited for this study through referrals from other healthcare leaders participating in this study that I did not have a collegial relationship with. The healthcare leaders that were referred to me were recruited for this study. I am a healthcare professional who has worked in healthcare for over 20 years and took an ethnographic role in conducting this research. My current profession is the Director of Patient Experience in Southeastern Pennsylvania at a local hospital. During the COVID-19 pandemic, I was tasked with managing and coordinating the COVID-19 screening process at all entrances of the hospital.

Research collected for this study was conducted while both the participants and I were onsite at our work facility through virtual conference via Zoom. My collegial relationship with some of the participants impacted the study by influencing participants to engage in the research study. Participants were there was not collegial relationship were excited to be part of the study because they believed COVID-19 was a public health crisis and felt this study would be beneficial to the healthcare industry. Additionally, my relationship to some of the study participants may cause bias within the research study. To address bias within the study, research participants were provided an opportunity to review research results prior to research findings being finalized.
Source of Data

To gather data for this study, in-depth interview questions were designed and formalized using information gathered from published news articles, online journals, and government publications about the Coronavirus pandemic. Interview questions were associated with the following concepts: public policies, Covid-19 mandates, the Covid-19 surge, resource demand, stressors, and exposure risk. Interview questions used in the study were six open-ended questions ranging from federal and state policies to questions on how the Coronavirus had impacted policy and operational changes in healthcare (see Appendix C). The data collected in this case study was from primary sources of individuals who range in healthcare professions that included roles such as chief operating officer, nurses, presidents, managers, administrator, and physicians. Individuals that hold these types of healthcare professional roles were requested to participate in the research because of their involvement and experience in working in healthcare during the pandemic. In addition, many of these professionals played a significant role in the decision making of managing the hospital during the pandemic.

Interviews were conducted in a semi-structured format focusing on the conceptual frameworks of the Coronavirus pandemic, resource demands, stressors, COVID-19 surge, exposure risks, and government policies. Semi-structure interviews were used in this study to allow for more information to be gathered in an informal manner and to give the participants an opportunity to elaborate on their responses and be open with their answers. Each interview session ranged from 45 minutes to an hour in length. To guide the interviews, an interview guide was used to aid me in asking questions. Interviews were administered via Zoom teleconferencing and were recorded to capture the depth of the interview. Handwritten notes were also captured from the interviews to capture additional information from questions answered.
Data Collection and Management

In gathering data from the in-depth interviews, data was transcribed in Otter online transcription software. Transcriptions produced from Otter were labeled with date, time, and interviewers initials. Data for this research study was stored on my Apple MacBook Pro in a file labeled “Franklin Data 2021”. Recordings of the zoom interviews were also stored on my Apple MacBook Pro and saved in a file labeled “Franklin Data 2021”. All data from the study will be stored on my computer for three years after the case study is published. All data transcription and videos will be deleted from my computer after three years to eliminate the opportunities for research participants identities being exposed.

Data Analysis

In using Otter software to transcribe the research data, transcriptions were reviewed to identify common themes. Themes identified were placed in categories in a Microsoft word document. A second coder was not used in this research study due to time constraints within the study completion timeline. Once themes were identified and categorized, I reviewed the data a second time to identify further themes that may have been missed. Once themes were identified and the results of the study were outlined, quotes from the respondents were also highlighted to explain results of the study. Codes were used to identify respondents’ responses to eliminate exposing the identity of the respondents when quotes were used.

Validity of Data Collection

To assess data and research interpretation validity, member check is a common validity tool used in qualitative studies. Respondent validation or member checking is used to determine whether the data analysis is aligned with the study participants’ experiences (Curtin & Fossey, 2007, p.92). According to Lincoln and Guba (1985), “Member checking is the most crucial
technique for establishing credibility” (p.90). To ensure and establish validity in this study, respondent validation or member checking was conducted. Members were provided a transcript of their responses to the survey questions and were asked to review, edit, and/or modify the information they provided. If the respondent identified areas within the data that need to be refined, the data was modified to capture the essences of the respondent’s perspective. Allowing the respondents to modify their responses is a common way to validate data credibility. Respondent validation was provided individually to allow the respondents to review the data on their personal time and in privacy.

**Ethics and Participant Protection**

Conducting research that uses data from interviewing individuals can pose ethical challenges and implications to the research study. These ethical challenges can include confidentiality of research participants, informed consent, relationship of the researcher to the participants, approval from participant and organization, and delays. In qualitative research, ethical dilemmas can develop if the research experience contradicting issues and choose between different methodology strategies as conflicts arise (Sanjari et al., 2014). To reduce the outcome of ethical dilemmas, it is important for the researcher to inform the research participants of their role in the research because they are involved in many aspects of the research study. Sanjari et al. (2014) states that the research may have to clarify their role to the research participants throughout the study to limit ethical concerns.

To reduce ethical concerns, the following procedures were conducted:

1. Research participants were informed about the research and provided consent.
2. Participation was voluntary and the nature of the research study was explained to the participants.
3. Participants names and organization were not identified or disclosed and
generalized.
4. Data protection protocols were administered to limit identify access, disclosure,
5. Research permission was granted by the university.
6. Conservation of records with the university’s approval by protecting password
access and other protective protocols.

**Methodological Limitations**

This study was conducted during and post the Covid-19 pandemic which could
potentially cause methodological limitations to the research. Research designs are not perfect or
free from explicit and implicit biases, but various methods can reduce the impact of study
limitations (Ross & Bibler, 2019). Collecting research data through teleconference systems such
as Zoom, small sample size, inability to generalize the research findings. To mitigate
methodological limitations of this study, data collected was recorded on Zoom to capture the
conversation and information provided by the participants. For this study, I aimed to collect a
minimum of 10 participants to have sufficient data. Research findings from the study were not
generalized but rather provided suggestions on study outcomes.
Chapter Four: Research and Analysis

Summary of Research Participants

Participants for this study were selected from the healthcare field and specifically professionals who worked in the hospital or a healthcare institution during the COVID-19 pandemic. Some of the hospitals and healthcare institutions were from the non-profit and for-profit sector of the healthcare field. These professionals worked in various departments within the healthcare fields and had some management responsibilities for the emergency preparedness amid the pandemic. Recruitment emails to participate in the research study were sent to ten individuals, and all ten participants accepted the invitation. The recruitment email provided details about the research study and the participant’s role in the study. Once the individuals accepted the invitation to participate in the study, a consent letter was sent and signed by the participants.

During the scheduling of interview, the interviewees were informed that the interviews would be administered and recorded on Zoom teleconferencing application. The interviewees were also informed that their participation was completely anonymous. Interviews were conducted from July 2022 through March 2023. Interviews were conducted individually and ranged from 30-45 minutes each. Interviewees were asked six questions and a follow-up question to gather additional information as it related to the initial interview question. Each interviewee was given an unidentified name as participant one through ten.

Demographics and Background of the Research Participants

The research participants in this study ranged from different ethnicities which included, White, Hispanic, South Asian, and Black. Five of the participants were white, one was South
Asian, one Hispanic, and three Black. All participants had worked in the healthcare field between a range of 15 to 30 years and held various healthcare roles that included nurse, physician, administrator, and manager as outlined in Table 2.

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<thead>
<tr>
<th>Sampling</th>
<th>Job Classification</th>
<th>Date of Interview</th>
<th>Major Responsibilities</th>
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<tbody>
<tr>
<td>Participant 1</td>
<td>Chief Operating Officer, Chief Nursing Officer, Registered Nurse, Non-profit Health System</td>
<td>7.22.22</td>
<td>Provide executive oversight of entire health system as it relates, business operations, patient care, financials, policies, and procedures</td>
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<tr>
<td>Participant 2</td>
<td>Hospital President, non-profit hospital</td>
<td>7.29.22</td>
<td>Provide administrative oversight of hospital operations, finances, policies, and procedures. Served as the Chief Incident Commander for emergency response during the Covid-19 Pandemic</td>
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<tr>
<td>Participant 3</td>
<td>System Director of Performance Excellence at Health System, Registered Nurse, non-profit health system</td>
<td>7.29.22</td>
<td>Oversee the Covid-19 screening of process and sites for the health system.</td>
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<td>Participant 4</td>
<td>Manager of Community Health Services non-profit hospital</td>
<td>12.29.22</td>
<td>Manages community health services and partnerships, served on the Emergency preparedness team during the pandemic. Responsibilities include daily notification to the Hospital Association of Pennsylvania (HAP) and the Department of Health on patient census, daily supply shortages, and critical needs of the hospital or health system.</td>
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<tr>
<td>Participant 5</td>
<td>Physician Practice Manager, non-profit health system</td>
<td>1.30.23</td>
<td>Manages a Gynecological and Obstetrics practice. Overseen and coordinated the daily operations of the medical practice including administering emergency preparedness measures</td>
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<tr>
<td>Participant</td>
<td>Role</td>
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<td>6</td>
<td>Medical Director of Occupational and Health Services for Health System and physician, non-profit health system</td>
<td>2.1.23</td>
<td>Provides medical direction and oversight of the Occupational Health practice that administers immunization, drug, and health screening for new hires and existing employees. Provides Covid-19 testing and vaccines to employees and implemented policies and procedures required by the Centers for Disease Control and Prevention and the Occupational Safety and Health Administration.</td>
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<tr>
<td>7</td>
<td>Chief Executive Officer for the health system, non-profit health system</td>
<td>2.24.23</td>
<td>The highest administrator in the organization that ultimately makes managerial and business decisions. All operational, policies, and procedures that impact the hospitals and health system are approved by the Chief Executive Officer.</td>
</tr>
<tr>
<td>8</td>
<td>Director of Cardiology Services at Hospital, non-profit health system</td>
<td>3.8.23</td>
<td>Manages the daily operations and policies for Cardiology Services including management of employees that work in the Cardiology department.</td>
</tr>
<tr>
<td>9</td>
<td>Physician Practice Administrator of multiple physician practices, non-profit health system</td>
<td>3.22.23</td>
<td>Manages several physician practices including management of the all the employees who work in the practice.</td>
</tr>
<tr>
<td>10</td>
<td>Healthcare Consultant, for-profit healthcare organization</td>
<td>3.25.23</td>
<td>Provides professional expert advice to hospitals and health systems to ultimately improve inefficiencies that impact the financial, safety, business aspects of the organization.</td>
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Findings

The goal of this case study was to determine how hospitals and healthcare organizations were impacted by the novel 2019 Coronavirus. This study used six questions to study the impact of Covid-19 through in-depth interviews from healthcare professionals who worked in healthcare during the pandemic. The data gathered from the interviews follows a thematic analysis. To adhere to confidentiality of research participants, numbers were assigned and used when quoting participants comments. Findings from this study were put into thematic categories. This study found that the healthcare industry experienced significant impacts because of the COVID-19 virus. The pandemic influenced healthcare practices, policies, ability to care for patients, and its business operations.

Finding- New Healthcare policies and processes and New Focus

Research Question 1: What measures have hospitals and health systems used to prevent the spread of COVID-19?

Participants were asked to provide details on how the COVID-19 pandemic challenged the healthcare system’s operations. Specifically what types of measure their organization took during the pandemic. The overall answers were similar amongst all respondents with common themes of policy changes, vaccine mandates, and isolation mask protocols. In addition, two participants mentioned how the hospital and healthcare industry had to shift its focus to care for patients and reduce the chance of virus transmission.

Hospitals and healthcare organizations had to act swiftly to protect their employees and patients from becoming infected by the virus. Measures such as allowing employees to work remotely and developing COVID-19 exposure procedures and policies that required healthcare
employees to communicate their COVID-19 infections and exposures in their homes to their employers. Participant one explains what it took to get some of their employee to work remotely,

“We had to immediately get people out of the buildings, we had to set up all these laptops and get people ready to work from home. And IT did an outstanding job getting like 3000 people set up to work from home in like, less than three weeks. If you get COVID-19, we want you to tell us, and we want you to stay home, so we're going to pay you to stay home. Then we created our furlough policy. And you could be home for a couple of reasons. One, you could work from home if your job no longer exists now. And you need to go home and just stay there, but we're going to pay you because it's not your fault that your job doesn't exist” (Participant 1, Interview July 22, 2022).

Employees who were in healthcare positions that were more essential were able to continue working but those that were not at the bedside or non-clinical were required to work remotely or their positions were temporarily eliminated. Healthcare employers paid their employees even if their position was eliminated or not needed at the time. As a result of hospitals and clinicians having to focus their care on treating COVID-19 patients, procedures such as elective surgeries, and preventative care screenings were put on pause. As consequence of services being on paused, hospitals had to redesign or create employee furlough policies. “Our furlough and sick leave policies were impacted. Our reporting structure for symptoms and testing was impacted. So, there were several policies that were developed” (Participant 10, March 25, 2023).

Participant 2 also discussed what it was like for its organization to implement new policies on attendance and furlough, “We had to modify the attendance policy, the furlough policy, I mean, it was really almost in every aspect of our business, you know” (Participant 2,
Interview July 29, 2022). Paying furloughed employees can be expensive for a healthcare institution to sustain especially if their patient volume is low and they are not receiving consistent revenue. Additionally, hospital had to extend their furlough guidelines to employees who were exposed to COVID-19 by someone in their household such as their spouse, partner, children, parents, etc. For employees who became ill because someone in their home was infected with COVID-19 were allowed to be furloughed.

There were also return to work guidelines for those healthcare workers who were infected. “To help support the needs of our staff in terms of their own illness, the illness of their family members, their lost time from work, and their personal protective equipment requirements, and the return-to-work guidance” (Participant 6, February 1, 2023). For hospitals to furlough its employees and still provide compensation can be significantly expensive. It was estimated that in 2020, hospitals were slated to lose over $323 billion because of furloughs, layoffs, reduction in services, and reduced compensation for healthcare workers (Ellison, 2020). This expected lose in revenue for the healthcare system can be crippling to an organization that is already challenged with high cost. The American Hospital Association reported that more than a dozen healthcare facilities went bankrupt in 2020 due to the pandemic (2020).

In addition to work from home policies and furlough policies being created and implemented, and the reallocation of the healthcare workforce, hospitals also had to implement supply policies because of the challenges with securing ample supplies to care for COVID-19 patients was significant. Participant 4 and 6 provided insights into what it was like to implement supply reuse policies for hospitals:

“We ran into issues with supply, you know, and having the right supplies and then having to repurpose mask like you know, and that I think I’m not a clinician, as I said, but I, I
know that that was not a comfort level, because it was not the routine protocols pre Covid. But it was understood that we, if we kept going through the burn rate of those supplies, if we did it as we did, prior to Covid, we would run out, and being able to bring additional supplies in was very difficult at many points during Covid, for a lot of different items (Participant 4, Interview December 29, 2022).

“From an employee health and safety perspective, we had to make changes to our fit testing and personal protective equipment policies to reflect the amount of masks we had on hand, and we could do to meet the personal protective equipment needs of our staff. To meet those needs, we had to make changes to those policies. So fit testing was impacted, the respiratory protection program was impacted (Participant 6, February 1, 2023).

As participant 4 noted, it was difficult for healthcare leaders and management to communicate to their employees that the hospital does not have adequate supplies and that staff will now need to reuse their surgical or N95 masks. As hospitals were implementing supply reuse policies, there were also policies and guidelines as to which clinicians took care of COVID-19, which units were the “COVID-19 unit, and who had to be screened for COVID-19 before entering the healthcare facility. The policies related to cohort patients on a specific unit and administering COVID-19 screening was being required by the Department of Health and Occupational Safety and Health Administration (OHSA). Healthcare institution had to review these mandates and guidelines to ensure compliance. These institutions were under the authority of the mandatory OSHA COVID-19 Emergency Temporary Standard of the Occupational Health Safety Act (OSHA, n.d).
“We had policies around how we took care of our patients, how we manage situations where our staff had outbreaks, how we responded, we had new standards from OSHA and how we screened and brought in patients to the organization that created a whole new service line for us around visitor management and checking in with visitors as they come in as a kind of stop point to make sure that we're accountable to those new rules from OSHA” (Participant 3, Interviewed July 29, 2022).

As participant 3 stated early, hospitals administered screening and visitor check-in protocols to ensure no one was entering the hospital sick or infected with COVID-19. As visitors enter the hospitals they were stopped at the front desk and asked questions about their contact with someone infected with COVID-19 and if they had an illness. Again, these protocols to screen visitors were being dictated by OHSA and the state Department of Health as the mitigation plan to reduce the spread of COVID-19. Participant 10 said, “During the pandemic, we put things in place where each visitor each patient, whoever had to be touched, they had to be screened, of course with symptoms and those Covid questions. And then they were given a visitor badge. Prior to Covid, we didn't have those policies” (Participant 10, March 25, 2023).

To continue to mitigate the spread of the COVID-19 virus, seven out of the ten participants outlined policies their organization implemented as a COVID-19 response measure. Most organizations implemented isolation mask policies as it was mandated by the federal and state government, and the CDC or healthcare facilities. Healthcare organizations also established policies to manage the supply of medical equipment and personal protection equipment (PPE) such as mask, gloves, and gowns. They also required their employees to get vaccinated once the vaccine was made available and approved by Federal Drug Administration (FDA). As participant
I stated during the interview, vaccine requirements were needed to reduce the spread of the virus in the hospital.

“Another policy change we had was to require the Covid vaccine, we had to, you know, allow for exemptions. And but we knew, requiring people to get the vaccine was not only a way to decrease the level of disparity in the vaccination status of people, but also, you know, it was the only way to keep our workforce in place to so that we can continue to serve the community, right” (Participant 1, Interview July 22, 2022).

In investigating the first research question, two of the participants discussed how the healthcare industry responded to the pandemic by becoming innovative and shifting its focus from a care perspective to continuously being flexible and adapting to change relatively quickly. The fact that COVID-19 was such an unknown virus and there was not a lot of information available to the healthcare industry during the initial outbreak of the virus, this forced hospital and healthcare organizations had to create a new way of caring for patients and the community. All the policy implementations, reduction in services, and shift how patients are treated have impacted the healthcare industry and hospitals. Participant 4 explains how the pandemic impacted healthcare. “I think it impacted healthcare in every way, shape, or form that it could have, I mean, healthcare, from my perspective, those on the front line in health care, are constantly needing to be flexible and adaptable. But the adaptability to Covid, it was so unknown, we didn't have a lot of details at the front end as to how things were going to play out” (Participant 4, December 29, 2022).

In similarity, Participant 9 discussed how healthcare shifted its concentration away from reducing cost and generating revenue. Hospitals and other healthcare facilities alike were in survival mode because of the severity of COVID-19 infecting so many people. “I think
everything shifted from trying to reduce costs and trying to increase revenue, to basically just trying to survive and make sure that they had enough people staffing to take care of the patients, that they had people properly trained” (Participant 9, Interview March 22, 2023). There was this sense of creating a new model of healthcare that focused more on public health rather than providing high quality healthcare at a reduce cost. It was more about how to social distance patients and healthcare workers while at the same time allowing patients to receive care and at the same time reducing the infection rate of COVID-19 and care for COVID-19 patients. Participant 10 what it was like to restructuring the healthcare delivery model during the pandemic, “We had to restructure things. We had to get creative, we had to build ways for patients to still see their providers with those flu-like symptoms, we had to kind of create the safe space for them” (Participant 10, March 25, 2023).

**Finding- Healthcare Innovation**

**Research Question 2:** How did hospitals adapt to the impact of COVID-19 virus?

As the pandemic continued to infect people nationally, the healthcare industry had to reinvent the way it delivered care to adapt to the challenges caused by the COVID-19. In some respects, healthcare services had to be reduced or canceled to shift the priority to caring for the high volume of COVID-19 patients. From hospitals that had surgical services to physician practices and community health workers, services in this space were canceled and employees were redeployed to assist in other areas of the hospital. A great example of a service that had to shift its focus and redeploy healthcare workers in other areas of the healthcare facility was the community health department. Much of community health workers job is to go out into the community and teach people about
health and wellness, follow-up on annual preventative care services, and educating the community on their personal healthcare.

“As clinicians, like the community health staff, we had to basically reinvent ourselves to be able to be helpful to the system and be productive during the whole pandemic. So that we added value instead of, you know, basically sitting on the sidelines. I think, adaptability and flexibility and stepping up or all major banners of the time” (Participant 4, Interview December 29, 2022).

At the time of the pandemic the healthcare industry was no longer focusing its attention on providing care at a low cost and how to be operationally efficient or providing community health resources and education to the community. It was now focusing on how to reduce the spread of the virus, ensure healthcare workers safety and mitigating its employees from contracting the virus, and caring for COVID-19 patients. Participant 5 states how hospitals adapted to the pandemic:

“COVID-19 has affected every aspect of health care, I think it has affected how we deliver health care, I think it has significantly affected our workforce, forcing people to be very adaptable about how we work and again, and how we deliver care. I think probably one of the most significant impacts, of course, has been the financial impact on health care systems” (Participant 5, January 30, 2023).

The ability for hospitals to be adaptable to the challenges of the pandemic impacted the way the healthcare industry made operational and care decisions. It also forced the healthcare system to make decisions quicker and implement services and programs faster. Prior to the pandemic, changes within the healthcare industry took longer to be implemented. “Change usually comes slowly, the COVID-19 pandemic demonstrated that is possible to rapidly retool
our systems if there is a strong enough stimulus” (Aggarwal et al., 2021). For the healthcare industry to redesign the way it delivered care and adapt to the pandemic, healthcare leaders and decision makers had to reposition employees in different job assignments and departments and redesign healthcare facilities and services. Five of the respondents in this study discussed how their organization had to adapt and reinvent the care model.

The healthcare industry is designed and backed science and research. Much of the care and treatment protocols have all been established through research and historical events that were documented and used to educate healthcare professionals. The earliest documented medical information and procedures dates back before 1800 according to the Encyclopedia Britanica (Rhodes et al, 2023). For hospital and healthcare institutions not having science to back their decision making or how to care for patients was an unfamiliar phenomenon for healthcare. “We typically have science that drives our decisions. And in this case, the science wasn't there yet” (Participant 1, Interview July 22, 2022).

Not only did healthcare institutions have to make decisions without the backing of science but they also had to make decisions quickly while using trial and error. Often in healthcare decisions and services are not implemented rapidly especially if they have not been proven scientifically or identified as a best practice. “I think the good thing about this is it really forced us to make quicker decisions to implement things faster to move, you know, from start to finish, very quickly, because we had to” (Participant 2, Interview July 29, 2022). The fact that healthcare institutions were implementing procedures and practices quickly was a positive outcome of the COVID-19 pandemic.

Another way hospitals and healthcare facilities adapted to the challenges of the pandemic was by utilizing other resources within the facility to change its focus on caring for the high
volume of COVID-19 patients. Participant 3 explains, “A whole new body of work in a time when we don't have the resources to have a whole new team of people to manage those. So, it pulls from the other, you know, work that people are doing, and people are having to let go of old work to make time for it…… It shifted the focus to one patient population that was obviously straining our capacity across many things. We had to learn how to manage, treat, and, and take care of Covid patients, but amongst that all, the other operations that were already churning, were disrupted, and had to kind of go on pause or shift their focus (Participant 3, Interview July 29, 2022). Other operations within the healthcare field were paused and disrupted because of the healthcare focus was shifted to managing the outcome of the pandemic.

The pandemic impacted the design of healthcare facilities that were under construction during the pandemic. “The way we design departments like waiting areas, in terms of spacing, and those kinds of things, we had to rethink those pieces. For us, we spent another million dollars, adding negative pressure rooms, right for isolation. You know, we only had a handful, probably scheduled. And now I think, you know, even the top floor of our new hospital, in total, like if we went through the same process again, or went through the same type of situation, we can have up to, you know, 30 plus rooms and negative pressure now, which was not the case, we probably had fewer than 10 at our old campus. So that was worth the expense is something we had to rethink” (Participant 7, Interview February 24, 2023). The pandemic forced healthcare architect and leaders to rethink how they were constructing facilities and what they could do differently to design healthcare facilities that would accommodate the precautions of the pandemic. Some of the precaution measures that can be used in the designing and constructing patient rooms and healthcare facilities is to improve the HVAC engineering controls to enhance containment and removal if infectious aerosols from hospitals (Olmested, 2021).
Finding- Infrastructure and Operational Deficits

**Research Question 3:** How did the COVID-19 affect the healthcare systems operations?

The healthcare system and hospital’s ability to be flexible to respond to the challenges of the pandemic caused infrastructure and operations deficits that were unforeseen. These infrastructure and operational deficits disrupted the healthcare systems business operations. As a result of hospitals shifting its focus, the cost to care for COVID-19 patients, secure supplies, and enough staff to care for the high volume of patients increased exponentially. The pandemic also impacted how people pursue healthcare services which ultimately had an impact on the healthcare systems bottom-line. “The fear of contracting COVID-19 in hospitals, led to patients postpone their hospital appointments” (Boby, Dewan, Sugga, 2022). People stopped going to the emergency room and primary care doctors. Participant 7 explains this phenomenon perfectly:

> “People choosing not to seek out health care during the pandemic, like not coming in for their regular visits, you know, with their primary care physicians or whatever it may be. So, what happens is, subsequently, these patients presented in more advanced stages of their illness or disease process, there are more acute situations, which creates a more higher acuity type of stay, once they present at an advanced stage, which creates longer hospital stays, which drive cost, right. So, again, that's another good example of, you know, byproduct of operational challenges that impact the public but then, as a byproduct impact our operations and cost within that hospital facility” (Participant 7, Interviewed February 24, 2023).

The healthcare industry had several phenomenon occurring during the pandemic, increase cost, supply shortage and delays, cancelation of procedures and surgeries, and staffing challenges. All these phenomena made it significantly challenging for the hospitals to increase
revenue and operate financially sound. Six of the ten participants in this study discussed how their organization was impacted by the cancelation of procedures and the difficulty securing supplies for patient care. Securing reputable personal protection equipment (PPE) from manufactures was a significant challenge for hospitals and healthcare institutions. PPE has been identified as a best practice precautionary measure when dealing with infectious diseases. Without adequate PPE for nurses, doctors, and clinicians treating COVID-19 patients was deadly.

As a result of the pandemic being so widespread nationally, every healthcare institution and organization was purchasing isolation mask and N95 mask as a protection against COVID-19. In addition to healthcare institutions purchasing masks, people who did not work in the healthcare field were also purchasing these PPEs, so the availability to secure masks was a big issue for the healthcare professional. Participant 1 states “Supply chain also became an issue because of all the PPE and some of the black market of PPE was counterfeit PPE or you are sending a million-dollar check and not getting any PPE. So, supply chain was another issue (Participant 1, Interview July 22, 2022). Similarly participant 2 also identified how securing supplies including ventilators was a challenge for healthcare. “That was probably the craziest part of the whole thing, was scrambling around trying to buy stuff every day. You know whether it was ventilators or mask or bowels or lab tests or anything…. the tried-and-true methods of securing things for the supply chain, I mean, all the things that normally worked, didn't work. So, we had to be incredibly creative to figure out how to, you know, do things differently. And I think certainly, in my role with logistics for the system (Participant 2, Interview July 29, 2022).

The shortage of PPE, ventilators, and other healthcare equipment was the not the only shortage challenge of the healthcare industry. As healthcare workers cared for COVID-19
patients, the number of healthcare workers becoming ill to the virus also increased. Participant 7 states “Lack of being able to fill positions on the floor, for instance, means on the front end, right in the in the emergency room, right? It just bottlenecks. You might be okay, from a staffing standpoint in the ER, right, and then suddenly, you're boarding patients, because you don't have enough staff upstairs to get patients through. So, throughput has been an issue. I think staffing, especially on the nursing side has been a huge challenge, which has created operational challenges in terms of throughput, and being able to staff” (Participant 7, Interview February 24, 2023).

As more people became ill and had to be furloughed from work, a shortage of clinician to care for patients became an issue. According to an NBC news outlet report, 190,000 healthcare works had been infected by the virus and 767 have died (Edwards, 2020.). The shortage of supplies and clinicians had an impact on healthcare cost. As the supply and demand rose, so did the healthcare costs. “It created a shortage of supply in terms of staffing, especially on the nursing side. And it made it very difficult the price, the cost of doing business, subsequently went through the roof in a hurry. You know, it's pure supply and demand curve, right. Economics. And so, the supply constricted, the demand went through the roof, and it pushed the price way up” (Participation 7, Interview February 24, 2023). Throughout the pandemic, hospitals continued to struggle with having available supplies and enough nurses and doctors. Hospitals across the United States were recruiting and using outside agency companies to bring in more clinicians. Participant 7 outlines how hospitals and healthcare facilities were impacted by limited staffing.

“I would say the supply still hasn't replenished, to any normal level, that we saw a pre pandemic, right. And so, you got a very limited pool of nurses, and other
professions as well. But if we're just sticking with nursing, you got a lot of health systems and hospitals fighting over a very condensed and smaller pool. And that makes vacancy rates higher than what we've seen and back filling those positions. Throughput becomes an issue big time (Participant 7, Interview February 24, 2023).

Furthermore, additional infrastructure and operational deficits experienced by the healthcare industry was the closure of medical services such as elective and non-life threatening procedures. Hospitals rely on the revenue from surgeries and non-threatening procedures in addition to other procedures provided. Hospitals that did not have a full range of healthcare services were significantly more impacted financially by the closure of elective surgery. Participant 3 said, “We closed all these services because everyone's so afraid to go outside. You mean like even outpatient services, outpatient surgery, you know, anything that wasn't deemed urgent was pushed back” (Participant 3, Interview July 29, 2022).

Comparably, participant 10 discussed how the cancelation of elective surgeries was the chief impact of the pandemic for the healthcare system and how physicians who only operate on patients were the most affected by this. “No elective surgery, I think that was probably the greatest impact they had on our organization. And the reason why I say that is because right now, I currently oversee Neurosurgery and ENT, and both of my practices, those doctors are surgeons, and so a lot of, especially in ENT, a lot of those are elective procedures, I mean, nobody's going to die, if they don't get their tonsils removed. So, it impacted our providers, it impacted staff, it impacted our hospital funding. And on top of that, with my Neurosurgeons, those are doc's, they bring in the most revenue with their procedures. And so, if you're not allowing the doctors to perform these procedures that bring in high revenue, then it’s going to take a toll” (Participant
Ultimately with the surgeons not operating during the height of the pandemic caused a domino effect on the hospitals and health systems budget. It also affected the nurses and other healthcare workers who worked with surgeons during surgical procedures.

Lastly, the pandemic had shaped everything in the healthcare field. It confronted aspect of how the healthcare system operated. The cancelation of services caused access issues for patients in need of elective surgeries, acquiring adequate supplies and equipment, and the abundance of healthcare workers readily available to care for patients. Participant 1 gives their perspective of how great the pandemic impacted healthcare by stating:

“I would say the Covid pandemic has challenged the healthcare system and operations from the patient perspective in terms of access to care and services from the human health resources perspective, from a stat you know, then in terms of staffing, and then from a supply chain perspective, in terms of the necessary equipment that you need to meet the needs of both the patients in the end the staff, so it suspended everything in and created a huge crisis” (Participation 6, Interview February 1, 2023).

**Finding – Progressive Medicine**

**Research Question 4:** How have hospitals and healthcare systems adapted to the challenges of the Coronavirus?

Healthcare Industry’s ability to pivot it services to focus on caring for COVID-19 patient and reduce the spread of the virus in its facilities brought on opportunities for healthcare to be adaptive to the challenges of the pandemic and become more progressive in a short amount time. Typically, healthcare innovation can be slow because of the risks and cost associated with it (Ramadi & Srinivasan, 2021). Aggarwal and colleagues (2021) states, “COVID-19 has brought
about incredible expansion of digital health and telemedicine services will enable clinicians to deliver chronic disease management programs not anchored to a hospital or clinic” (p. 2). Hospitals had to quickly implement telemedicine services, provide work from options for its employees, and develop new programs and policies. Five of the ten participants discussed how the pandemic forced their facilities to adapt to the challenges of COVID-19 and become more innovative to care for patients.

One area where the healthcare industry had to embrace innovation was by allowing some of its workforce to work outside the walls of the hospital or healthcare facility. The implementation of telemedicine to accommodate social distancing and increase access for patients who needed services such as psychiatry, primary care, and other consultative services was also an area of innovation for the healthcare industry especially for facilities who were not offering telemedicine services at all. During the pandemic, many of the hospitals were not well versed in telemedicine and had not used this technology before.

“I think that the whole issue of remote access, like now we have more telemedicine available, it's been changed, you know, that wasn't really something that was routine before Covid” (Participant 4, Interview December 29, 2022).

The implementation of telemedicine services allowed physicians to see patients in the comfort of their home and while at the same time reduce their chances of becoming infected with COVID-19. The utilization of telemedicine expanded during the pandemic because insurance companies were waiving their telemedicine restrictions and allowing more medical services to be used with telemedicine. Prior to the pandemic, telemedicine had low utilization because insurance companies were inconsistently reimbursing healthcare providers for telemedicine services, and it was often not covered by insurance (Shaver, 2022). There were also restrictions
on what types of services telemedicine could be used for such as Radiology, Psychiatry, and Cardiology (Shaver, 2022). According to Participant 10 in this study, “We turned a lot to telemedicine. So that means that the doctors, a lot of my doctors didn’t have to necessarily come in, they worked from home and just saw patients over telehealth” (Participant 10, Interview March 25, 2023). Telemedicine utilization increased exponentially and the spending on telemedicine increased to $3.7 billion in the United States according to the US Government Accountability Office (US Government Accountability Office, 2022).

Providing telemedicine services during the pandemic was new healthcare delivery model that was being embraced by the government insurance companies, private insurers, and the healthcare industry. Healthcare providers were able to provide treatment and consultation to patients in the comfort of their homes and they were able to reach patients in rural areas that once had challenges with accessing healthcare. Participant 6 explains what it was like for healthcare providers to administer telemedicine in the community.

“I think that there's been a huge, distributed model now for healthcare, like health care that was being pushed out into the communities is now being pushed out virtually, versus being, you know, in person, let alone being in hospital. So, remember how we were talking about, we first want to have a lot of the services that are held at hospital that are at a huge cost pushed out to the community, at our lesser cost, and now from the community, it's being pushed into people's homes with a computer” (Participation 6, Interview February 1, 2023).

The pandemic forced hospitals and healthcare system to rethink how they handled emergency management and how they designed facilities to mitigate the spread of infections. Over the years, there have been disease outbreaks that have transformed how society respond to
crisis and how we design and sanitize facilities. “The past pandemics inspired sanitary, housing, and urban planning reforms while SARS-CoV-1 initiated changes in building design and drainage in Hong Kong” (Boby, Dewan, & Sugga, p.2). Participants 7 and 9 explain their perspective on emergency management and facility design because of the pandemic.

“We were building a brand-new campus, from the ground up. And I think when we started that planning phase, like seven, eight years ago, I mean, nobody was thinking about a global pandemic. And then, you know, we didn't stop that project. But I mean, having to go through that, and then the design phases for the new campus certainly made us rethink how we were designing the building” (Participant 7, Interview February 24, 2023).

During the pandemic, many hospitals and healthcare organizations paused their construction projects to adhere to social distancing guidance and because of COVID-19 outbreaks amongst construction workers. Some health systems continued their projects during the pandemic. For healthcare institutions who were in the beginning stages construction of new facilities like participant 7, they were able to use the challenges of the pandemic to rethink the architectural designs of the hospitals and healthcare centers being built during this time. Now when healthcare facilities are being built, specific technology and architectural capabilities will be used as a precautionary measure in the event another pandemic happens.

The last area of innovation for the healthcare industry was crisis management and how they handled critical issues that impact the entire organization. “Crisis management techniques that are probably a little bit more effective now that we've gone through something such as a pandemic. So yeah, I think we can be a little bit more proactive now. And I think we'll be more prepared and that's been the big the big change” (Participant 9, Interview March 22, 2023).
Karimian and colleagues’ states, crisis management involves planning, organizing, infrastructure, leadership, and control (2022). During a crisis the goal is to always mitigate the threat, preparedness, and respond, and recover after the disaster or threat. The pandemic provided an opportunity for the healthcare industry to learn to better manage infectious outbreaks, how to effectively deploy healthcare workers to remote jobs, and the efficacy of telemedicine services.

**Finding 5- Healthcare and Government Query and Ambiguity of Information**

In researching how the pandemic has impacted the healthcare industry, this research study identified two secondary findings. As the pandemic progressed the healthcare system and government were in a query and there were significant amounts of ambiguity of information being reported in the media. Participants 4, 7, and 10 proclaim that there was ambiguous information being presented.

“I think we would be further ahead if federal and state government had been singing off the same song sheet. But there was a lot of misinformation that was being funneled out there. And it worked against us as public health people or health care people of being able to get a better handle on this. And I personally am not an expert by any stretch. But I think though, issues like that and not being on the same page. In terms of lock downs, and business closures, I mean, I know all those things were very difficult. And people were impacted in many, many ways, financially and otherwise. But I do think if we had just been stronger and held our ground at the beginning, we might not have been in it as long” (Participant 4, Interviewed December 29, 2022).

Those that worked at the bedside caring for the COVID-19 patients and working in the healthcare leadership roles who had to make decisions for their healthcare organization during
the pandemic felt that the government was not doing enough to support the healthcare field. At the beginning of the pandemic there was a lot of misinformation and delayed information that was not helpful to healthcare workers who trying to save people’s lives. Participant 7 goes into further detail about this and talks about how the federal and state government seemed fragmented when disseminating information to the community and the healthcare industry. The uncertainty from the government increased fear amongst people especially those in the healthcare as it related to the shortage of supplies.

“It felt disjointed from the federal level to the state level, in terms of what we needed to do and how we needed to approach things. I think the supply shortages, mask, gloves all those kinds of things, was scary, to try to think about how you needed to start rationing, because you weren’t sure” (Participant 7, Interviewed February 24, 2023).

The uncertainty and fragmented information were not the only thing that caused ambiguity of information. “It was like these mandates was being passed by the governor and state, and they were different by state to state” (Participant 10, Interviewed March 25, 2023). The mandates related to social distancing, masking, and vaccine, etc. were different depending on where the mandate came from. Every state has its mandates, and they were not all the same across states. Furthermore, the federal government also administered mandates that were different than the states mandates. With information not being consistent and aligned across the board caused people to be scared and was not helpful in stopping the spread of the virus or supporting the healthcare industry.

The COVID-19 pandemic brought a tremendous amount of uncertainty in the healthcare industry and United States government. The pandemic brought forth significant issues around government regulation, dissemination of medical and scientific information, and decision making
As a secondary finding to this research study, at the beginning of the pandemic, there was several sources providing inaccurate and speculated information about the transmission and the source of the Covid virus, and how to cure the virus. Furthermore, there were inconsistency and contradictory of information in the media and at the federal and local government. The contradictory of the origin and transmission of the COVID-19 virus, travel restrictions, information on when to wear a mask, social distancing protocol, efficacy of the COVID-19 vaccine, and the viability to cancel medical services at the hospitals. Participant 4 says:

“The travel restrictions were government based, you know, where you could come in from or what you had to do to come into the country or get out of the country, how you can get back in after you decided to go out? Like those are all government rules”

(Participant 4, Interviewed December 29, 2022).

During the interview sessions, research participants were asked if there were any public policies that negatively impacted the hospital or healthcare systems ability to care for patients. One of the participants noted that the government and local officials should have taken a more aggressive approach to shut down facilities to stop the spread of the virus. Participant 6 explains:

“I do think that from a public health perspective, they should have shut down nursing home sooner, which is where a lot of the spread was occurring, from community to nursing home patients, and from nursing home patients out to the community”

(Participant 6, Interviewed February 1, 2023).

Petersen states “when people are specifically worried about contagion, they tend to listen more to political advise about how to avoid contagion” (Petersen, 2020). Five of the ten research participants discussed how certain public policies impacted the healthcare system and caused
contradiction of information in the media and government. The inconsistency of information increased mistrust in society and in patients seeking healthcare.

One of the areas that helped cause mistrust within the healthcare system and the government was the information that was provided in the media about what type of mask to wear and whether someone needed to wear a mask all together. According to participant 9, “I particularly remember the beginning of the pandemic, when people were kind of asking for guidance on masks wearing, what kind of masks to where what will be helpful was not helpful. And I feel like we were given incorrect guidance about the impacts of wearing a mask at all, and how the guidance was basically that is only for health care professionals. And those are the only types of people that really need to be wearing masks because it's not helpful to anyone else. And when we did get to the point where the information was clarified about how the protective powers of mask wearing, by the time we got to that we had already shared the information about it not being helpful, so I feel like it impacted our ability to be able to actually get people to wear masks, because coming from the government coming from reputable sources, there were lots of different types of information about effectiveness” (Participant 9, Interview March 22, 2023).

The beginning of the pandemic, people were instructed that they did not need to wear a mask and then they were instructed to wear a cloth mask. As time went on, people were instructed to no longer cloth mask and a surgical mask and N95 mask was the best type of mask to wear as a respiratory protectant against COVID-19. “Cloth masks should not be mandated for healthcare workers” (Chughtai, Seale, Macintyre, 2020). The constant change in information did not help people believe there was a severe pandemic and people needed to take precaution of wearing a mask to protect themselves.
The decision to cancel elective surgeries and procedures was another area that cause mistrust about the pandemic. Every state had mandates for the hospitals and healthcare facilities to follow during the pandemic. One of these mandates was to cancel non-life threatening procedures to redeploy healthcare workers to areas that were caring for COVID-19 patients. “At the state level at least I’m not sure on federal but state was to, you know, cancel all elective procedures, you know, and hospitals had to really decide on whether they are going to continue anyway. And document well if it was deemed medically necessary, or do we stop and I believe that some health care's systems did stop and some didn't” (Participant 8, Interviewed February 8, 2023).

When the COVID-19 vaccine became available, there were people who believed the vaccine was a conspiracy theory and was against getting the vaccine. One of the participants in this study said that the vaccine mandate was the most conflict-ridden aspect of the pandemic. “It was probably the most divisive, which is just vaccine mandates. Like, I can go Google right now and look at pandemics from early 1900s was like, I mean, people dancing in the streets when a vaccine was made available, you know. And that's been seen over and over this time, it happened, it was like, it's all conspiracy” (Participant 7, Interviewed February 24, 2023). The inconsistent information and different opinions about the origin of the virus from the beginning of the pandemic did not help influence people to get vaccinated. In an article published by PBS, it affirmed “when it comes to COVID-19 misinformation, any new report on virus origin quickly triggers a relapse and a return of misleading claims about the virus, vaccine and masks that have been reverberated since the pandemic began” (Klepper, 2020).

Participant 7 provided substantial information on how the government play a large part in sparking the difference of opinions about the virus and the vaccine requirements. Participant 7
says that the political right and left caused the distrust in healthcare and ambiguity about the pandemic. Additionally, the political right and left are people that we may work with or live next to and they have different thoughts about the COVID-19 virus.

“The last seven years have ignited the far reaches of the political right and left. Which, by large, right, I would say with us growing up, we would look at extremism outwardly and say, man, look at what's happening in that country or, or over there. And it's probably the first time we've had to live through seeing it right down the street or in our backyards, right (Participant 7, Interviewed February 24, 2023).

This research participant goes on to explain that the political right and left who were against were not trying to advocate for finding a vaccine and vaccinating people in masses to mitigate the spread of the virus quickly. “And then you take an issue like this, which should seemingly be very straightforward, man, this is a novel strain. And it's here, we're facing a pandemic, and this is killing tons of people. Let's find a vaccine, just like you would have for polio or anything else. And let's, let's get it to the masses. And let's get past this thing together. And it didn't pan out that way (Participant 7, Interviewed February 24, 2023). Surprisingly, these same political right and lefts were also losing loved ones from COVID-19 but that did not change their perspective about the pandemic and getting vaccinated.

People who did not believe in there was a pandemic going also were the same people who were coming into the hospital and being mandated to wear a mask in the hospital buildings or when caring for patients. For those that worked in the healthcare field were mandated to get vaccinated or they were no longer allowed to work. Healthcare workers who had different beliefs about the COVID-19 pandemic virus struggled with the vaccine mandates. Participant 7 further explained what this was like for healthcare leaders who had to uphold the vaccine mandates in
their facilities, “It created, you know, outside of the healthcare arena, right, it was highly charged, but if you could imagine, right, like these are all individuals who walk into a hospital and healthcare system, and all have different personal beliefs. And, you know, as a result, had strong feelings about mandates. In terms of saying, if you're going to work here, you must be vaccinated. Right. And I think people struggle with that. And it made Yeah, it made it an interesting environment to have to from an administrative standpoint, especially try to go and have those conversations, but then create accountability right around those policies that you were falling in line with, you know, it's a federal mandate and you know, we're going to follow suit and it was very tough because it had implicates around again, workforce” (Participant 7, Interviewed February 24, 2023). A recent study found the number one reason the vaccine was refused was because of misrepresentation of information and mistrust in government, pharmaceutical companies, and public health experts (Khubchandani et al, 2022). Those that could not get onboard with the mandate opted to resign from the healthcare field all together.

In comparison, participant 4 discussed how the government has a significant impact on the information being disseminated to people and how people perceive the information they are receiving. Participant 4 explains, “Government impact is very significant in that they're the leader of the of the process of addressing it as a country, you know, they're the ones who are steering the ship. So, but again, if you have even tweaked to that, who said just kind of sends people on edge, so, and we saw that for sure” (Participant 4, Interviewed December 29, 2022). The governs role in leading people to embrace the vaccine and believe there was a real public health crisis was not always consistent. This inconsistency made people distrust the government, healthcare, and the efficacy of the vaccine. It also ensued further conspiracy about the pandemic.
Government agencies such as the Department of Health, Center for Disease Control and Prevention, and the Centers for Medicare and Medicaid Services also played a role in this mistrust of information about the pandemic. The government flowed information to these government agencies and vice versa, and both institutions disseminated information to citizens.

“I think we got so we got bombarded with information from the CDC, from DOH, from CMS from everywhere, and it was contradictory. And so now that leads us who, you know, working in this field day to day to be like, well, how do we trust these reputable right organizations when they don't even know? And I think, I don't know if, if they could have done anything different? Because that's what people do. That's what systems do when they're in a scramble, you know, but I think if we have more information on how it travels, how its contracted, how long the recovery truly is, when is it contagious? When is it not, I think we could have helped our providers, our staff, our patients, a little bit better” (Participant 10, Interviewed March 25, 2023).

The constant misinformation in the media from government officials and agencies increase the publics mistrust in the healthcare system and potentially impacted people’s decision to get vaccinated, wear a mask, and social distance themselves. The misinformation also increased conspiracy theories in the media. Peterson explains, “when people encounter something significant but lack an explanation, they tend to accept bizarre explanations rather than live with uncertainty” (Petersen, 2020). Mistrust in the transmission of the COVID-19 virus and in the healthcare, field did not help slow down the spread of the virus. In some respects, the misinformation or constant change in information caused people to become more anxious about contracting the virus and forgo seeking healthcare when they really needed it.
Finding- Healthcare Cynicism and Exhaustion

The final secondary finding of this study found that the COVID-19 pandemic created cynicism and burnout in the healthcare field. Since the start of the pandemic, there has been a tremendous amount of discussion on how the pandemic has impacted healthcare workers and the industry as it relates to burnout, employee turnover, and increased distrust in the medical field. Participant 7 states, “I think people are just tired. I think there's a lot of exhaustion, mental emotional exhaustion, just from the byproducts of some of the pandemic and the lack of available staff. This creative burnout on a level I probably haven't seen, in the 16 years, I've been around for this” (Interviewed, February 24, 2023). “Burnout is a prolonged exposure to occupational stressors, and it has a serious consequence for healthcare professionals and the organizations in which they work” (Montgomery et al., 2019). Participant 2 explains how impactful the pandemic has been on the workforce and that pandemic has made significant impacts on the healthcare workforce.

“I think the impact are, are going to be everlasting. In the way that we do things. I think that it's impacted the workforce significantly, as you know, I think it has caused a lot of people to leave the business. Just because it was basic, traumatic” (Participant 2, Interviewed July 29, 2022).

Burnout and mistrust in the healthcare industry has put a significant burden on healthcare professionals to respond to employee disengagement and moral, and distrust in the community. The issues that healthcare organizations are facing as it relates to burnout and distrust are not individual issues but rather a systematic issue. Montgomery et al. (2019) confirms that exhaustion and cynicism is a shared problem in response to shared job stressors. Research
participants in this study explained what the healthcare industry is experiencing post-pandemic. Participant 9 explains,

“As a country, we didn't do the best job at protecting the health care workers. I think that now there might be people who are fearful of being a part of the healthcare industry. Because if something like the that were to happen again, they may probably be fearful that they won't be protected, because they saw what happened during the pandemic. I would say healthcare has changed because from my perspective there is lack of protection and lack of care for the average healthcare worker” (Participant 9, Interviewed March 22, 2023).

Healthcare employees being disengage, having low morale, and burnout can have a significant impact on healthcare operations and organization’s sustainability. Low employee morale and burnout can increase the chances of medical and patient safety errors and a high turnover of employees. Furthermore, burnout is linked to meager quality of care, low patient satisfaction, and sleep deprivation (Montgomery et al., 2019). In further understanding healthcare cynicism and exhaustion, participants detail how they feel the healthcare system has changed. Participant 4 and 1 speaks to how their organization has been impacted by employee exhaustion.

“I think healthcare has changed. I think the way health care is administered has changed. I think for a period, people were afraid to come to the hospital. Like they were afraid. I think we're coming out of that a little bit now. But I think that people were afraid to even go to a doctor's office just for routine care. So now you're ending up in a situation where our health care practitioners are not dealing with people who find an issue early on, they're finding it late. So, the ramping up of that care is more immediate. It's a more
serious situation, and oftentimes results in an earlier death” (Participant 4, Interviewed December 29, 2022).

The pandemic shifts the way people handled their healthcare needs and seek healthcare services. People are more reluctant to go to the emergency room and go see their primary care doctor because of the fear of contracting COVID-19 or some other infectious virus. By the time people do make their appointments to see the doctor or to have procedures done, they are more likely to have other health issues because they waited long to seek healthcare. During the pandemic, 40% of adults in the United States have dodged seeking medical attention (Czeisler et al, 2020).

In dissimilarity to the idea that the healthcare system has been changed by the way people seek healthcare services, participant 1 discussed how the healthcare workforce as a whole as changed. The pandemic forced healthcare workers who took care of patients to work long shifts and care for severely sick COVID-19 patients. It strained the workforce and people who worked in healthcare started to rethink and consider their own well-being.

“It's changed how the workforce thinks about their work, I think that it's produced such a burden for clinicians that, you know, they, they are struggling with their own well-being and resilience, because it's been, you know, year after year of Covid, with these big giant surges. And, you know, we don't we have less people dying, but just having to take care of so many Covid patients and not sort of their regular patients is a challenging” (Participant 1, Interviewed July 22, 2022).

The high volume of COVID-19 patients being cared for constantly was a huge burden the healthcare workforce. People working in the healthcare industry were experience physical and mental exhaustion from the pandemic. Healthcare workers who were at the front lines of the
dealing with the COVID-19 patients were more prone to burnout (Leo et al, 2021). Exposure to pressure of high volume of infected patients, limited supply resources, witnessing family members and loved ones dying to the virus, and working long hours were all contributing factors to healthcare workers becoming exhausted.

As a result of healthcare cynicism and exhaustion, a significant amount of healthcare professionals have left the healthcare industry altogether. Healthcare professionals are finding job opportunities that do not put their emotional and physical well-being in jeopardy. People are having a renewed since of priorities that aligns with having work-life balance and less stress. Participant 1 said, “I would say employee burnout, physician nurse and healthcare worker burnout, I would say is a big public health crisis. People are exiting health care retiring, switching, switching careers withdrawing from their commitment to health care, because they are tired. It was it's been a tough two years, two and a half years” (Participant 6, Interviewed February 1, 2023). A recent study noted there was a high prevalence of depression, anxiety, and sleep disorder during the height of the pandemic (Leo et al., 2021). Healthcare workers being exhausted can lead to medical errors, poor patient outcomes, and lack of communication amongst the care team. Leo and colleagues (2021) explain, providing high quality care is difficult for healthcare professionals who experience burnout.

In comparison participant 10 explained how nurses are looking for other types of jobs that provide more flexibility and work-life balance. Those healthcare workers who are used to working 12-hour shifts are seeking job opportunities that provide a daytime schedule with less hours but still pays well. They are also seeking jobs that require less time caring for patients at the bedside. “I tend to get a lot of those nurses that are like, look, I'm just burned out and it's more so from now that hospitals type of those shifts, even though they get paid more at those,
you know, the hospitals and bigger facilities, they're just looking for a set schedule nine to five no weekend's no holidays. I think that comes to say they are burned out” (Participant 10, Interviewed March 25, 2023). In 2019, it was reported that 54% of nurses and physicians, and 605 of medical students were experiencing burnout (U.S. Department of Health and Humans Services). The rapid increase in burnout amongst healthcare workers could potentially have a significant impact on the healthcare industry and those seeking healthcare careers.

The Association of American Medical Colleges estimates there will be a shortage of 139,000 physicians by 2033 (HHS, 2022). The decline in healthcare workers will have a major impact on the healthcare industry and public health. Participant 3 stated, “I'd have to hope that we're going to have more people interested in, in the healthcare field. But at the same time, we're seeing rapid, there's just dizzying numbers of turnover of people that are burned out. We have a crisis ahead of us, we already knew in the nursing industry that because of the baby boomers aging that we were going to have a significant shortage of nurses. And now we've coincided that with burning nurses out that are only 10 or 15 years into their career” (Participant 3, Interviewed July 29, 2022). Much of the decline of healthcare workers is associated with the pandemic but it also contributed to the aging population in the workforce. People are entering retirement and a large amount of people took their retirement during the pandemic.

With there being a decline of healthcare workers and increase in burnout, healthcare leaders want to see people excited about going to medical and nursing school. In addition, they want people to also be enthusiastic about entering into support services careers that support the healthcare industry such as housekeeping. “I would love to see, you know, renewed sense of inspiration and interest in in pursuing healthcare professions, especially on the clinical side. And that's not just yes, it's nursing. And yes, it's people making the choice to go to medical school
and, and those kinds of things, but it's every other piece, right? That support services, whether it's a whole range of, of tech support for, you know, techs for different imaging modalities for labs, right, just whether it's phlebotomist or whatever it may be, you know, surgical techs, all those kinds of folks that are just so instrumental in being able to deliver care” (Participant 7, Interviewed February 24, 2023). If there are not sufficient healthcare workers such a physicians, nurses, and support services personnel, will leave people without access to critical healthcare services and treatment. The burnout in healthcare has become an important issue for the government and healthcare decision makers to figure out how to decrease the exhaustion withing the healthcare industry.

Chapter Five: Limitations, Recommendations, and Conclusions

The purpose of this study was to examine how the COVID-19 pandemic impacted the healthcare system and its policies by utilizing a qualitative thematic framework. To analyze the impact of the COVID-19 on the healthcare industry, this study used in-depth interviews responses from healthcare professionals working in healthcare during the COVID-19 pandemic. This research studies aim was to answer four research questions:

1. What measures have hospitals and health systems used to prevent the spread of COVID-19?
2. How did hospitals adapt to the impact of COVID-19 virus?
3. How did the COVID-19 effect the healthcare systems operations?
4. How have hospitals and healthcare systems adapted to the challenges of the Coronavirus?

Additionally, this study explored how the government impacted the healthcare system and its ability to care for patients and mitigate the spread of the virus. The research participants
were asked six in-depth questions that gaged challenges within the healthcare system, policy changes, federal and state government’s impact on the healthcare industry, and the shift in the healthcare culture as a cause of the pandemic. This chapter of the research study will discuss limitations, recommendation, and conclusions of the study.

**Limitations**

In conducting this study, limitations were identified, including limited research on the COVID-19 pandemic as it relates to the challenges faced by healthcare organizations, number of participants, and technical issues with recording interviews via Zoom. The beginning stages of this research begin around the height of the pandemic when there was limited research and information available about the virus and how it impacted and affected healthcare patients, healthcare professionals and organizations. In general, the world has had limited available data on the spread and source of the virus and about emerging social and economic challenges associated with the recent pandemic (Alvarez et al., 2023). This study’s participant sample size was relatively small and based on individuals experience which is difficult to generalize findings. Unfortunately, the pandemic made it difficult for people to meet in-person due to social distancing requirements, so the utilization of virtual meeting platforms like Zoom were used often. Inability to meet the participants in person made it challenging to read research body language and gestures as they answered questions. Furthermore, for some participants, the Zoom interview session may have been their final virtual meeting for the day and potentially rushed through the interview due to being exhausted from being on Zoom. The increase in utilization in virtual meetings led to a new phenomenon called “Zoom fatigue” (Shockley et al., 2021).

To establish credibility within this study, member-checking was used to clarify feedback from the study participants. Participants were given an opportunity to review the information
they provided in the study and clarify their answers and meanings to research questions. Another limitation to this study is not using triangulation to validate the research findings. Triangulation was not used as a method to account for credibility due to time consumption and the intensity to involve a second researcher and/or use multiple sources of data for this study.

**Recommendations for Future Research**

Research is a mechanism to learn about topics that impact societies, organizations, governments, and people. The limited research on the topic of the COVID-19 and how it has impacted the healthcare industry and government is important to study further. The pandemic has significantly impacted every person in the world in some way and there is much to learned about how societies have been impacted. To fill the gaps in COVID-19 research, expertise in medicine, public health, computer science in collective research is urgently warrant for successfully overcoming the virus (Guangbo, 2020). There is a need for additional findings on how the government has been impacted from a policy perspective and how the workforce in the healthcare industry has been affected. Much of the political agenda in the United States government has a link to medicine and the healthcare industry which is why it’s important to study the impact of COVID-19 further.

**Recommendation for Government Alignment During Crisis**

Throughout the pandemic, the United States government played an important role in providing information about the origin of the virus and how the public was to protect themselves, and the urgency for public to get vaccinated once a vaccine was available. One of the key findings of this study discussed how there was misinformation, distrust, and ambiguity within the government and how it affected the public’s support of the Covid vaccine, social distancing, and masking mandates. To influence the public on policies, the government used various modalities
to communicate and spread policy agendas. These communication modalities include, the news, social media platforms, and political campaign events such as the presidential debates. However, during the pandemic, there were government officials who used these platforms to communicate their personal beliefs, theories, and political agendas about the pandemic.

In an effort influence people to adhere to public health guidelines and mandates, it is recommended the government and public agencies remove ambiguity and build trust by using the news, social media, and campaign events to give accurate political information to the public oppose to various inaccurate, subjective, and misinformed information. Misleading information from government elites can have a downstream influence on public behaviors as it relates to voting, attitudes towards policy, and polarization (Santoro et al, 2021). The next time there is a public health crisis, the government would need to provide accurate information from the onset of a crisis or public health issue to build trust with the public and influence behaviors. As Santoro and colleagues’ states “Political elites and policy stakeholders who seek to inform the public can be aided when their messages are shared between social contacts” (p.2).

Another recommendation to eliminate misinformation during a crisis is for the federal government to ensure each state was following the same recommended mandates about masking, social distancing, and COVID-19 vaccine administration. Under the Public Health Service Act, the U.S. Secretary of Health and Human Services has the authority to put measures in place to eliminate the spread of communicable diseases (CDC, 2021). The public health agencies at the state level are supposed to enforce mandates and policies that are administered from the U.S. Secretary of Health and Human Services. To enforce these laws, the state level agencies can utilize law enforcement agencies to enforce public health policies (CDC, 2021). During the pandemic, state law enforcement agencies were not utilized to enforce public health mandates
such as social distancing and masking. Utilizing these agencies would have also reduced the influence of misinformation and ambiguity amongst the federal and state governments. Providing accurate information without ambiguity and responding quicker to crisis enhances public buy-in and eliminates conspiracy theories.

**Conclusion**

This study identified six findings that detail how the pandemic impacted the healthcare system. The first finding was that the hospitals and healthcare organizations had to implement new policies, processes, and reinvent their focus to successfully care for COVID-19 patients. Healthcare institution had to develop remote work policies to accommodate the large number of employees who jobs were being redeployed in other areas of the hospital or healthcare facility. Furlough policies were enacted to ensure employees who were sick with COVID-19 would receive pay while staying home and healing from the virus. In addition to furlough policies for employees who had a household exposure to COVID-19 and had to quarantine for 10-14 days. There were supply reuse policies to adjust to the challenges of not having enough masks for clinicians to care for COVID-19. Everything that the healthcare system once did to treat patients and manage their employees had to be reassessed to handle the challenges of the pandemic.

Healthcare innovation was the second finding of this study. The healthcare industry had to embrace innovation quickly to sustain its workforce and care for patients, and deal with the over capacity of COVID-19 patients. When it came to caring for COVID-19 patients, the hospitals were using trial and error to mitigate the spread of the virus and treat patients. In the beginning of the pandemic, decisions were also made without scientific backing and based on trial and error. Another way innovation was used during the pandemic was when healthcare workers position had to be redeployed in other areas of the hospital. Departments such as
community health had to forgo being in the community and teaching the public on health and wellness; they were used in other capacities such as screening visitors who came into the building. To successfully care for patients, the hospitals had to implement virtual health programs, cancel healthcare programs as an effort to protect their employees from contracting the virus, and reorganizing employees to work in areas of the hospitals that were most critical.

The third finding of this study was that healthcare professionals who were interviewed identified there were infrastructure and operational deficit that impacted healthcare organizations. Some of these deficits were that people forgoing their healthcare needs due to fear of contracting the virus, limited supply of equipment such as masks, and the cancelation of surgeries and procedures, and limited number of employees working in the hospitals due to being sick with COVID-19. Because the virus was so aggressive in infecting people quickly, the public was deferring from going to the emergency for illnesses and seeing their primary care providers for preventative care.

The cancelation of services and surgeries was a significant deficit to the healthcare system because much of the revenue generated is from elective procedures and surgeries. The cancelation of these services weakened the healthcare system’s financials and caused some hospitals to become bankrupt and close. Lastly, the limited number of healthcare workers working in the hospital during the pandemic had declined due to a hefty amount of healthcare workers becoming infected by the virus and having to be furloughed. Being understaffed cause the resources to be stretched in hospitals and caused physical and emotional distress to healthcare workers.

The fourth finding was that hospitals and healthcare organizations had to quickly provide progressive medical services such as the expansion of digital healthcare like telemedicine and
adapt to a remote workforce and remote access to healthcare. Telemedicine became popular during the pandemic amongst healthcare providers and institutions. Virtual medicine became a new healthcare delivery model for the healthcare industry. It allowed for clinicians to see their patients without being in contact with sick patients who may have the virus. Several healthcare systems and facilities adopted a remote workforce for some positions. Healthcare organizations realized that remote work was beneficial during the pandemic and after the pandemic. Many healthcare facilities continued to adopt remote work even after the pandemic. The architectural design of facilities was an area that healthcare systems progressed. There was a lot learned about how hospitals and healthcare facilities should be designed to better adapt to the potential for another pandemic or endemic.

The query of healthcare and government and the ambiguity of information was the fifth finding of this research. The research participants discuss the significant amount of distrust in the healthcare field and government because of misinformation being publicized in the media. The federal and local state government were key in disseminating information to the public about the COVID-19 virus. The government was the decision makers during the pandemic and dictated how people should protect themselves from the virus, when the vaccine would be available, social distancing, masking, and the availability of COVID-19 testing. The numerous amounts of different information from the government caused the public to not believe there was a pandemic and whether the vaccine would protect you from the virus. The misinformation and contradictory information also caused there to be ambiguity and increased theories of how to treat, cure, and mitigate the spread of COVID-19.

Lastly, the final finding of this study noted that the impact of the COVID-19 pandemic induced healthcare cynicism and exhaustion. Those healthcare professionals that worked in the
hospitals and healthcare facilities during the pandemic became burned out and exhausted. The COVID-19 surge and the amount of people that died from the virus, was a significant burden to the nurses, doctors, and clinicians. As a result of this extreme burden from the pandemic, some healthcare professionals opted to leave their healthcare profession. Some healthcare workers left the field of healthcare for an opportunity that would afford them less stress and limited exposure to COVID-19. The appetite to work in the healthcare field has declined due to the pandemic and there are concerns that in the future, the healthcare industry will not have enough nurses and doctors to care for patients.

The COVID-19 pandemic has significantly had ramifications on the healthcare industry as it relates to how hospitals and healthcare operate and care for patients. Some of the impacts experienced in healthcare were a result of misinformation from the government on the federal and state level. Not only did healthcare professional have to care for high volumes of Covid patients, reduce the spread of the virus, and experience extreme exhaustion, they also had to deal with the misinformation in the media and distrust in the healthcare system from the community. All these factors were a substantial that it forced some healthcare professions to leave the healthcare field in pursuit of a stressless care. The fear of contracting the virus and transmitting it to their family also was a factor for healthcare leaders to resign from the healthcare field.

This research study showed that there were a multitude of factors associated with the pandemic that impacted healthcare and because of these factors being substantial, there was a cultural shift in the healthcare field. People had an increase or enhance distrust with medicine and medical science. The distrust was partly because of the numerous variations in information being published in the media by the government and government agencies about the pandemic.
When people do not trust the healthcare industry, they tend to not use healthcare services and forgo going to the hospital or seeing their doctor when they really need to.

One of the positive outcomes that impacted the healthcare system is its ability to quickly progress services, pivot to change, and implement innovative services and technologies sooner. The utilization of virtual medicine such as telemedicine was a tremendous innovative technology that allowed hospitals to build its business and care for patients while mitigating the spread of COVID-19. The impact of COVID-19 on the healthcare industry has indefinitely changed the healthcare area. The healthcare system will no longer be the same post-pandemic and is being forced to adapt to its new culture of burnout employees, increase resignations, low excitement to work in healthcare.
References


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Appendix A

Research Recruitment Email

Subject Line: You can contribute to COVID-19 Research

Dear:

I’m working on a research study on the Coronavirus pandemic, and I need your help. The goal of this study is to understand the impact of the Coronavirus pandemic on the healthcare industry over the past two years. This study will highlight the challenges healthcare employees and organizations had to face to sustain patient care during the pandemic. If you were working at a healthcare facility during the pandemic, then your participation in this research is valuable and welcomed.

To be eligible for this research study, you must be:

- Healthcare professional (must be in a managerial or above role)
- Employed at the selected healthcare during March 1, 2020, to May 1, 2022
- Individual’s involvement in any Coronavirus planning at their job.

If you fit the above requirements and are interested in helping, sign up for the study by responding to this email. Your participation in this study is completely voluntary and your identity or information will not be shared in the study.

Please let me know if you have any questions regarding this research study.

Kindly,

Jameyshia Franklin
West Chester University DPA Candidate
Appendix B

Project Title: The Impact COVID-19 on The Healthcare Industry's Systems and Policies: Case Study

Consent Form

Investigator(s): Jameyshia Franklin; Dr. Michelle Wade

Project Overview:
Participation in this research project is voluntary and is being done by Jameyshia Franklin as part of her Doctoral Dissertation to Examine how the Coronavirus pandemic in 2020 has influenced the healthcare industry's systems and policies. In addition, this study will explore lessons learned related to the pandemic and its impact on hospitals and healthcare organizations. The results from this study can be used for future research. Your participation will take about 45 minutes to in-depth interviews.

The research project is being done by Jameyshia Franklin as part of her Doctoral Dissertation to examine how the Coronavirus pandemic in 2020 has influenced the healthcare industry's systems and policies. In addition, this study will explore lessons learned related to the pandemic and its impact on hospitals and healthcare organizations. The results from this study can be used for future research. If you would like to take part, West Chester University requires that you agree and sign this consent form.

You may ask Jameyshia Franklin any questions to help you understand this study. If you don’t want to be a part of this study, it won’t affect any services from West Chester University. If you choose to be a part of this study, you have the right to change your mind and stop being a part of the study at any time.

1. What is the purpose of this study?
   - Examine how the Coronavirus pandemic in 2020 has influenced the healthcare industry's systems and policies. In addition, this study will explore lessons learned related to the pandemic and its impact on hospitals and healthcare organizations. The results from this study can be used for future research.

2. If you decide to be a part of this study, you will be asked to do the following:
   - in-depth interviews
   - This study will take 45 minutes of your time.

3. Are there any experimental medical treatments?
   - No

4. Is there any risk to me?
   - None

5. Is there any benefit to me?
   - None

6. How will you protect my privacy?
   - The session will be recorded.
In-depth interviews with research study participants will be recorded for the purpose of transcribing data from the study. Audio recordings will be conducted through the Zoom Teleconferencing application.

Your records will be private. Only Jameyshia Franklin, Michelle Wade, and the IRB will have access to your name and responses.

Your name will not be used in any reports.

Records will be stored:
- Password Protected File/Computer
- Participation in this study is completely anonymous. Participants names and other identifying information will not be shared or used in this study.
- Records will be destroyed Three Years After Study Completion

7. Do I get paid to take part in this study?
   o No

8. Who do I contact in case of research related injury?
   o For any questions with this study, contact:
     - **Primary Investigator:** Jameyshia Franklin at 708-949-0327 or je744027@wcupa.edu
     - **Faculty Sponsor:** Michelle Wade at 610-436-2031 or MWade@wcupa.edu

9. What will you do with my Identifiable Information/Biospecimens?
   o Not applicable.

For any questions about your rights in this research study, contact the ORSP at 610-436-3557.
I, _________________________________ (your name), have read this form and I understand the statements in this form. I know that if I am uncomfortable with this study, I can stop at any time. I know that it is not possible to know all possible risks in a study, and I think that reasonable safety measures have been taken to decrease any risk.

______________________________                Date: ________________
Subject/Participant Signature
Appendix C

In-depth Interview Questions

INTERVIEW QUESTIONS

1. How has the COVID-19 Pandemic challenged the healthcare system and its operation?

2. What types of policies changes has the organizations had to implement due to the pandemic?

3. Which COVID-19 Public Policies Federal or State do you feel have impacted the Hospitals or healthcare industry? In What ways has it impacted hospitals?

4. Are there any policies on the state or federal level that could have been modified or implemented differently to assist the healthcare industry? Or Hospitals?

5. Are there any public policies that you believe negatively impacted hospitals ability to care for patients?

6. Has the pandemic changed the culture of healthcare? And in what ways has the culture changed?
Dec 22, 2021 11:23:53 AM EST

To: Jameyshia Franklin  
Department: Col of Business & Public Manag, Public Policy and Administra.


Dear Jameyshia Franklin:

Thank you for your submitted application to the WCUPA Institutional Review Board. We have had the opportunity to review your application and have rendered the decision below for The Impact COVID-19 on the Healthcare Industry’s Systems and Policies: A Case Study.

Decision: Exempt

If there are any questions, please don’t hesitate to reach out to irb@wcupa.edu

Sincerely,

WCUPA Institutional Review Board

IORG#: IORG0004242
IRB#: IRB00005030
FWA#: FWA00014155