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Covid-19 financial consequences in United States hospitals

Hannah T. Osburn
osburn33@marshall.edu

Murat Mert Solakoglu
solakoglum512@gmail.com

Gretel Toloza Alvarez
tolozaalvare@marshall.edu

COVID-19 FINANCIAL CONSEQUENCES IN UNITED STATES HOSPITALS

ABSTRACT

Introduction: Since the wake of the coronavirus pandemic, United States (U.S.) hospitals have struggled to stay financially afloat amid the constant battle with unprecedented circumstances and financial consequences from the pandemic. The purpose of this research was to analyze the financial consequences of COVID-19 for U.S. hospitals to determine the impact on the number of inpatient cases, length of stay (LOS), surgeries performed, and operating expenses. The hypothesis was that U.S. hospitals were financially affected by the consequences of COVID-19, having more inpatient cases, increased LOS, fewer surgeries performed, and higher operating expenses.

Methodology: The methodology for this qualitative study was a literature review following systematic reviews and a semi-structured interview. The references used for this research were located using Marshall University's EbscoHost, CINAHL, ProQuest, and PubMed research databases. The inclusion criteria were articles published in the English language and studies conducted in the United States between 2012 and 2022.

Results: The results of this study show that the inequalities in the distribution of CARES Act funding increased financial vulnerability for many hospital markets across the country. The results also show that, in all U.S. children's hospitals, the number of inpatient stays was lower since the onset of the pandemic, as well as the number of emergency department visits and surgeries. Additionally, study findings show that the pandemic resulted in significant net income losses for all U.S. hospitals.

Discussion: This investigation indicated that Covid-19 has caused a huge financial burden in U.S hospitals, causing an increase of LOS, more impatient cases, fewer surgeries, and higher operating expenses.

Conclusion: Study findings point to the need for increased funding for U.S. hospitals to more effectively manage the number of inpatient cases, LOS, surgeries performed, and operating expenses, ensuring future sustainability and better health outcomes. Although previous findings indicated that CARES Act funding improved U.S. hospital outcomes amid the pandemic, our study followed a greater number of hospitals, both urban and rural, than those in studies conducted previously. Future researchers should consider investigating the impact of COVID-19 financial consequences on U.S. hospitals from beginning to end since the pandemic is still ongoing.

Keywords: The keywords used to conduct this research included ‘COVID-19’ AND ‘financial consequences’ AND ‘inpatient cases’ OR ‘surgeries’ AND ‘length-of-stay' AND ‘U.S. hospitals.’

INTRODUCTION

Since the wake of the coronavirus pandemic, United States (U.S.) hospitals have struggled to stay financially afloat amid the constant battle with unprecedented circumstances and financial consequences from the pandemic. In the first three months of the pandemic, the typical U.S. hospital lost 50% of its emergency visit volume, 70% of its surgical volume, and 30% of its inpatient admissions (Kinney et al., 2020). According to the American Hospital Association (AHA), the pandemic caused $320 billion in hospital revenues to disappear in calendar year 2020 (AHA, 2022). In May 2020, U.S. hospital financial executives stated that their hospitals experienced shortfalls in annual revenues ranging from 15% to 30% (Kinney et al., 2020).

In response to these financial concerns, the Coronavirus Aid, Relief, and Economic Security (CARES) Act was enacted in March of 2020 with the purpose of contributing $100 billion to reimburse hospitals and other health care organizations (Boserup et al., 2021). Most of the funds, however, were distributed to the largest hospital systems that serve the greatest number of Medicare patients, placing low-income populations and rural, safety-net hospitals at a disadvantage (Wilensky, 2020). In fact, over 400 rural facilities were left vulnerable to closure based on financial and operational metrics (Boserup et al., 2021). One of the main challenges of the pandemic had been COVID-19 patients going to small, rural hospitals in which a full spectrum of care was not accessible. It quickly became evident that significant variations in care existed, as many patients did not have access to urban tertiary care centers (Weiss, 2021).

Another challenge related to the pandemic was the healthcare workforce shortage. A major hospital in Minnesota reported that they lost 13.5% of their nurses in the last year (Weiss, 2021). One reason for this was that nursing staff were at the forefront of hostility from both

patients and their families. Hospitals across the country have faced similar obstacles, as many nurses, health care assistants, and other professionals have left the field or changed practices.

Elective procedures have been one of the most profitable services for hospitals, with elective admissions having accounted for over 30% of total inpatient hospital revenue in 2014 (Khullar et al., 2020). One estimate showed that hospitals earned $700 more for elective admissions than for admissions through the emergency department (Khullar et al., 2020). Following the declaration of the COVID-19 pandemic, the American College of Surgeons highly suggested that hospitals should consider going through their elective surgeries and possibly postpone them to make more room and space available for critical care resources and reduce patient exposure to COVID-19. Following this suggestion, elective procedures had been canceled and outpatient departments had been closed several times to limit the spread of the virus and create more room and medical supplies for coronavirus patients (Best et al., 2020). Cancellation of the elective surgical procedures due to the COVID-19 pandemic has resulted in an estimated loss of $16.3 to $17.7 billion in reimbursement and $4 to $5.4 billion in net income per month to U.S. hospitals (Best et al., 2020). With many U.S. hospitals having pre-pandemic financial problems and a heavy reliance on revenue from outpatient and elective services, these cancelations had posed a substantial threat to the financial stability of hospitals.

The suspension of elective surgeries had been merely one of several factors that resulted in financial consequences for U.S. hospitals. The CARES Act, despite its unequal disbursement, has played a pivotal role in combatting this significant decline in patient volumes and hospital revenues (Congress.gov, 2020). However, with such additional funding came additional monitoring. The federal government has required U.S. hospitals to document the use of all funds, whether in the form of CARES Act funding, a paycheck protection program loan, or some other

type of funding (Congress.gov, 2020). More specifically, when it came to CARES Act payments, hospitals have been required to provide attestation that funds were used for COVID-related costs and COVID-related loss of revenue (Kendrick, 2020). In response to the pressure on hospitals due to such documentation requirements and government monitoring, the Community Hospital Corporation developed a COVID-19 financial dashboard to help hospital leaders manage cash flow associated with the pandemic. The dashboard also has encouraged hospital leaders to ensure that additional funding was appropriately reviewed and tracked (Kendrick, 2020).

According to the American Hospital Association, U.S. hospitals would suffer losses in net income of about $54 billion over the next year (AHA, 2021). CARES Act funding was calculated into Kaufman Hall's projection. The AHA estimated that more than one-third of U.S. hospitals would fail to overcome their negative operating margins throughout the year's end of 2021 (AHA, 2021). Additionally, the AHA noted that these negative operating margins not only had the potential to maintain but even worsen, as the variants of COVID-19 posed unpredictable outcomes for U.S. hospitals.

Data from hospital cost reports in the Healthcare Cost Report Information System was taken to analyze the high-impact distribution of CARES Act funding to 952 hospitals from December 2020 to June 2021. Wide disparities in CARES Act fund allocation were identified in this study. More specifically, 23.6% of matched hospitals received under $5 million, 22.1% received $5 million to $10 million, 26.3% received $10 million to $20 million, 11.4% received $20 million to $30 million, 4.6% received $30 million to $40 million, and 7.8% received over $50 million (Van Beusekom, 2021).

U.S. hospitals that received the most CARES Act funding were teaching hospitals that had more assets prior to the pandemic, and teaching hospitals that cared for the most COVID-19

patients. Critical access hospitals, on the other hand, received the least CARES Act funding. Non-profit hospitals received 13% more CARES Act funding than other hospitals, academic hospitals received 42% more funding, and critical access hospitals received 40% less funding (Van Beusekom, 2021).

The purpose of this research was to analyze the financial consequences of COVID-19 for U.S. hospitals to determine the impact on the number of inpatient cases, length of stay (LOS), surgeries performed, and operating expenses.

METHODOLOGY

The hypothesis was that U.S. hospitals were financially affected by the consequences of COVID-19, having more inpatient cases, increased LOS, fewer surgeries performed, and higher operating expenses.

The methodology for this qualitative study was a literature review following systematic reviews and a semi-structured interview. The research study began with the identification of certain types of U.S. hospitals that were affected the most by the financial consequences of COVID-19. The impact that the financial consequences had on inpatient cases, LOS, surgeries performed, and operating expenses were then identified and noted during the same process. This systematic review was conducted in a phased manner and included the establishment of an overall strategy, determination of the inclusion and exclusion criteria, and literature and case study classification and analysis.

Conceptual Framework:

The conceptual framework for the assessment of COVID-19 financial consequences in U.S. hospitals began with the identification of problems in the healthcare system. The main

problem was limited financial resources. Next, the implementation of additional financial resources was assessed to determine if it may improve inpatient care, LOS, surgeries performed, and operating expenses. The implementation of additional financial resources was also assessed to determine how those potential outcomes compare to the actual outcomes experienced by many U.S. hospitals. Subsequently, an analysis of the application and adoption of additional financial resources for U.S. hospitals was conducted, which led to the discovery of benefits and barriers. The benefits promoted the adoption of the CARES Act to address the consequences of COVID-19, while the barriers impeded the adoption of the CARES Act to address the consequences of COVID-19, leaving the implementation of additional financial resources for U.S. hospitals to be based on whether the benefits outweighed the barriers (Figure 1) (Wilensky, 2020).

Step 1: Literature Identification and Collection

The initial phases of the research study were limited to the identification of the certain types of U.S. hospitals that were affected the most by COVID-19 financial consequences to comprehend the scope of data available for analysis and to identify the key areas to concentrate on. The search was then extended to identify how much of an impact that the COVID-19 financial consequences had on inpatient cases, LOS, surgeries performed, and operating expenses in these hospitals. The keywords used to conduct this research included ‘COVID-19’ AND ‘financial consequences’ AND ‘inpatient cases’ OR ‘surgeries’ AND ‘length-of-stay' AND ‘U.S. hospitals.’ The references used for this research were located using Marshall University’s EbscoHost, CINAHL, ProQuest, and PubMed research databases. When information could not be located within these databases, Google Scholar was utilized. Google search engine was also used to research government and private associate websites.

Semi-Structured Interview

A semi-structured interview was also utilized as a source of research for vital data that contributed to the literature review. The interview was face-to-face, recorded, and IRB approved. The interview participant provided informed consent, with a full understanding that the interview was conducted under terms in which the only risk involved may be a potential breach of confidentiality. The terms of the interview also included that the recording would be destroyed after transcription, and the transcription would be deleted at the completion of the study. The information gained from the interview, articles, and websites were used as the sources of primary and secondary materials. Following the review of relevant abstracts, appropriate articles were used for the reporting of information and conclusions.

Step 2: Establishment of Inclusion Criteria and Literature Analysis

The inclusion criteria were articles published in the English language and studies conducted across the various states of the United States between 2012 and 2022. The selected literature was chosen for a thorough review based on whether their abstract represented information that was closely related to the study. The articles were then shortlisted for use based on if they had provided further details that were pertinent to the research study.

The exclusion criteria were the years of publication as the articles used in this research were sourced from 2012 to 2022 and did not include earlier publications to include more relativity to the research paper. This research was done by HO, MS, and GTA and validated by AC who enacted the role of a reviewer and assessed if the references met the inclusion criteria.

Step 3: Categorization of the Literature: PRISMA

The Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) framework (Page et al., 2021) was used for the identification of 373 literary reviews that were

relevant to the research study. References were included (N=17) if they met the inclusion criteria and excluded (N=363) if they did not meet the inclusion criteria. Articles from other sources were also included (N=9) in the research. These 17 references were subjected to full-text review and included in the final data abstraction and analysis. Only 10 references were used in the results section (Figure 2).

RESULTS

Inequalities in CARES Act Funding Among U.S. Hospitals

According to a recent study, U.S. hospitals that experienced the greatest financial strain from the COVID-19 pandemic were in markets with high levels of debt and uncompensated care (Orlando & Field, 2021). Researchers proposed a new measure of financial risk in hospital markets with an emphasis on comparing counties among the U.S., which involved combining both pre-existing financial vulnerability and COVID-19 severity. Using this measure, results from the study showed that the largest share of risk was in counties like Big Horn County, Montana, which had high poverty, low population density, and high shares of foreign-born and non-White populations (Orlando & Field, 2021). The CARES Act significantly helped many hospitals, but it also left many hospital markets with the same overall vulnerability to financial strain.

Financial Impact of COVID-19 on U.S. Hospital Inpatient Cases & LOS

Children's hospitals in the U.S. responded to the COVID-19 pandemic by limiting nonurgent healthcare encounters, conserving personal protective equipment, and restructuring care processes to mitigate viral spread (Vanderbilt Center for Child Health Policy, 2021). A study conducted by the Vanderbilt Center for Child Health Policy assessed year-over-year trends

in healthcare encounters and hospital charges across U.S. children's hospitals prior to and amid the COVID-19 pandemic. Researchers performed a retrospective analysis, comparing healthcare encounters and inflation-adjusted charges from 26 tertiary children's hospitals reporting to the PROSPECT database from February 1 to June 30 in 2019 (prior to the pandemic) and 2020 (amid the pandemic).

All children's hospitals experienced similar trends in healthcare encounters and charges during the study period. Inpatient stays were lower by a median of 36% per hospital, emergency department visits were lower by a median of 65% per hospital, and surgeries were lower by a median of 77% per hospital (Vanderbilt Center for Child Health Policy, 2021). Throughout the study period in 2020, children's hospitals experienced a median decrease of $276 million in charges (Vanderbilt Center for Child Health Policy, 2021).

Financial Impact of COVID-19 on Surgeries Performed in U.S. Hospitals

Within the first two months of the pandemic, U.S. hospitals had an estimated revenue loss of $22.3 billion nationally because of the cancellation of elective procedures (Sourav, 2021). Another study conducted in 2020 by the University of Pennsylvania in Philadelphia revealed that even only a few months of canceling the elective procedures did cost one university's healthcare program 42% of its net revenue for five months, nationally U.S. hospitals suffered a loss of $1.53 billion due to lack of elective pediatric surgeries performed (Plescia, 2021).

April 2020 saw the biggest effect on every area contrasted with going before midpoints of the monetary year. Pre-COVID office visits found the middle value of 2,256 every week contrasted with the COVID time frame normal of 1,048 or 46% from gauge. Pre-COVID careful cases found the middle value of 169 every week, contrasted with 71 or 42%. Pre-COVID work

RVU age found the middle value of 26,130 contrasted with April with 9,722 or 37% of gauge normal. Pre-COVID charges found the middle value of $5,214,925 each month contrasted with April with charges of $1,753,992 or 33% of the pre-COVID normal. Office visits, careful cases, charges, and RVU age saw general increments of 28%, 6%, 17.6%, and 15% separately in the period following the lifting of limitations (Amato et al., 2021).

To evaluate the influence of minimized surgical care across the country, 25 U.S. hospitals were surveyed in July 2020. These hospitals were jointly distinguished across 25% of all hospital beds in the United States. The findings showed that U.S. providers saw roughly a 35 percent decrease in surgical volumes from March 2020 to July 2020 compared to the year prior. The financial impact of this reduction in elective procedure volume, which typically drove a disproportionate share of revenue and margin for hospitals, caused an estimated $200 billion in financial losses for hospitals and health systems between that time frame (Berlin et al., 2021).

Financial Impact of COVID-19 on Hospital Operating Expenses

With cases and hospitalizations at high levels in the wake of the swift spreading of the Delta variant (mostly unvaccinated patients), physicians, nurses, and other hospital personnel were working diligently to look after COVID-19 patients. At the same time, hospitals were experiencing profound net income losses that likely would continue during the rest of 2021. According to a Kaufman Hall report released in September 2021, it was projected that U.S. hospitals nationwide lose an estimated $54 billion in net revenue over the course of the year, even with the federal Coronavirus Aid, Relief, and Economic Security (CARES) Act funding from last year (Financial Effects of COVID-19, 2021).

The report projected those hospitals across the nation projected lose about $54 billion in overall gain during the year of 2021, even after considering alleviation gave under the Coronavirus Aid, Relief and Economic Security Act. Without government help reserves, the estimated loss would have been just about as high as $94 billion, as per the report (Ellison, 2021). In particular, the assessment projected that middle hospital edges could be 11% beneath pre-pandemic levels before the year was over. However, it cautioned that the new expansion in COVID-19 cases attached to the Delta variation was not a component considered in the review. The genuine performance results showed that the level of emergency clinics with negative working edges had diminished from the first to second quarters, the examination saw it improving to 35 percent in the second from last quarter and afterward stayed level in the fourth. It was important that the flood in cases attached to the Delta variation was likewise excluded from this examination, as indicated by the report (Reynolds, 2021).

In early 2021, Kaufman Hall projected that the effects of COVID-19 would continue throughout the year. Some of these effects included hospital margins falling between 10% to 80% and revenue falling between $53 billion to $122 billion in comparison to pre-pandemic levels (Pifer, 2021). In 2020, spending on healthcare was down following the declaration of the pandemic; in fact, hospitals in the U.S. had an estimated spending decrease of nearly $150 billion, including roughly 5% of personal medical spending (Cutler, 2021). The estimated health care spending amount for U.S. hospitals in 2021 was $150 billion (Cutler, 2021).

DISCUSSION

The results from the literature review and interview with the OVP Health CFO have supported the expected hypothesis. The findings of this research showed that U.S hospitals have experienced big burdens in the operations expenses due to the impact of Covid-19. It was found

in our research that emergency departments, surgeries, impatient stays and visits had a significant decrease along with a distinguish loss in the net income, margins, and revenue. The interview conducted was a close example of the struggles experienced by U.S hospitals. Also, it was found that there were disparities in the CARE Act funding that was designed to help and alleviate some financial strains in hospitals due to Covid-19.

The expected hypothesis was that the U.S hospitals were financially affected by the pandemic Covid-19, increasing LOS, having more impatient cases, fewer surgeries, and higher operating expenses. Many U.S rural and small hospitals closed their doors due to the financial hardship they were not able to stay open and keep providing care to the population. Furthermore, the financial consequences of this pandemic created a wound on the healthcare system.

With these findings we can support the purpose of this research, which was to analyze how Covid-19 affected U.S hospitals financially and determine the impact on the number of impatient cases, LOS, surgery performed, and operating expenses.

Semi-Structured Interview

A semi-structured interview was held with the chief financial officer of a local health care organization regarding the financial impact of COVID-19. More specifically, the interview questions were primarily focused on being a leader amid a pandemic, while also managing the financial position of an organization. When asked about being a health care executive during COVID-19, the interview participant explained that, as a leader, he stood for being honest, not just as a human being, but as a business supervisor and director for the organization. He went on to discuss how COVID-19 was so unexpected, so strategic planning was crucial to combat the decreases in volume. According to him, his organization experienced decreases in volume of

between 10% to 15%. Like other health care systems and organizations, this organization had a telehealth platform prior to the pandemic, so they were able to keep the status quote as far as volume.

The interview participant explained how the pandemic opened his eyes to different services, which led to a discussion about how his organization went on to open an extension of themselves with the goal of serving recovery patients, as well as creating a different type of revenue and gaining partnerships with different organizations in the region. Financially, the pandemic woke everyone up and changed their scope of practice for the years to come. He explained that, in 2021, operating expenses were very inflated. His organization experienced growth in personnel and made new positions, as talent was valuable more than ever. He mentioned that he did not lay off any personnel; instead, he did everything to ensure that his personnel were taken care of. He felt that his employees did not experience any negative effects, but the company did because of the risks associated with the uncertainty of how long the pandemic would continue. He explained that his organization values family first, so they formed strong weekly COVID-19 groups that did a lot of education and training focused on the change that was occurring in the health care system.

The company stayed surprisingly healthy throughout the pandemic. He discussed the importance of being honest, as it is one of the best methods to not only retain your employees but keep them motivated during the pandemic. He admitted that he lacks the perfect solution, but he was straightforward from day one about being insistent on taking care of the employees. Even throughout the pandemic, his organization continued the disbursement of bonuses and annual increases. He knew that despite trying to be optimistic, he and his executive team were often scared and insecure of what was going to happen tomorrow, such as making the wrong decisions

or getting fines. However, the senior leadership stayed positive and kept in mind that if they stayed together, they were going to make through.

He also explained how he allowed a lot of his personnel to work remotely, although it was an additional cost to the company because they were not working as efficiently. One of the most important lessons from the pandemic was to be adaptable to change, especially when it comes to workplace culture. His thoughts on the future of healthcare were that it is headed in the direction of telehealth, although he did not think it was the most high-quality service. He also expressed his thoughts on services globally and how he projects that they will have low reimbursement. The biggest dilemma in the future, in his opinion, is that healthcare globally is going to struggle to afford payroll costs in general.

Limitations

Although this research paper has provided significant information regarding the financial burdens in U.S hospitals due to Covid-19, the study faced several limitations. First, due to the limited amount of information available, it restricted our data collection and supporting literature reviewed sources. The search was conducted though Marshall University's EbscoHost, CINAHL, ProQuest, and PubMed research databases. However, due to the minimal literature Google scholar was used in order to expand the search. In addition, the selected strategy applied may have limited our findings and relevant literature. Second, there is a good margin in the different financial hospitals outcomes and how this pandemic has affected hospitals, due to the diverse hospitals strategic plans to face Covid-19, plus there is a variation between big hospitals to small, and rural hospitals, that wasn't taken into account on this study.

Practical Implications

Hospitals are under the financial struggle currently. Covid-19 has affected healthcare in a significant way, where many hospitals are closing and others are in the process of financial recovery. The implementation of the CARE Act funding is crucial to the future sustainability of U.S hospitals. Nonetheless, this study has affirmed that Covid-19 has severely damaged the economy of U.S hospitals. Therefore, supporting the LOS, performed surgeries, ER visits, impatient stays, and hospitals visits.

CONCLUSION

In this study, we analyzed the financial consequences of COVID-19 for U.S. hospitals to determine the impact on the number of inpatient cases, LOS, surgeries performed, and operating expenses. We hypothesized that U.S. hospitals were financially affected by the consequences of COVID-19, having more inpatient cases, increased LOS, fewer surgeries performed, and higher operating expenses. After conducting a literature review following systematic reviews and a semi-structured interview, our analysis concluded that the inequalities in the distribution of CARES Act funding increased financial vulnerability for many hospital markets across the country. Also, we concluded from the results that in all U.S. children's hospitals, the number of inpatient stays was lower since the onset of the pandemic, as well as the number of emergency department visits and surgeries. Additionally, study findings led to the conclusion that the pandemic resulted in significant net income losses for all U.S. hospitals.

Although previous findings indicated that CARES Act funding improved U.S. hospital outcomes amid the pandemic, our study followed a greater number of hospitals, both urban and rural, than those in studies conducted previously. It is possible that outcomes would vary if measured over a longer period, such as from 2020 to the end of 2022. Future researchers should consider investigating the impact of COVID-19 financial consequences on U.S. hospitals from

beginning to end since the pandemic is still ongoing. Regardless, our results point to the need for increased funding for U.S. hospitals to more effectively manage the number of inpatient cases, LOS, surgeries performed, and operating expenses, ensuring future sustainability and better health outcomes.