TURKISH JOURNAL OF INTERNAL MEDICINE

ISSN:2687-4245

Review

Impact of the COVID-19 Pandemic on the US healthcare system

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ABSTRACT

The COVID-19 epidemic had an enormous effect on the health of millions of individuals worldwide and the global economy. A shortage of doctors, nurses, personal protective equipment, and medicines was seen globally. The pandemic drew attention to limitations in the healthcare sector of the United States of America. The massive rise in the daily number of cases, more usage of ICU facilities and all the treatment modalities, and increased overtime compensation for the staff negatively impacted the hospital's finances. This also affected the mental and physical health of all the healthcare workers. Through additional funding from federal relief legislation and the relaxation of many regulatory requirements, the federal, state, and local governments took significant steps to address the need for prevention and treatment services that arose from COVID-19 and the disruptions in healthcare delivery and finances resulting from the pandemic. Congress enacted the Coronavirus Aid, Relief, and Economic Security Act, or CARES Act, on March 27th, 2020. This measure appropriated $2.2 trillion to offer immediate and direct economic assistance to Americans affected by the COVID-19 outbreak.

Turk J Int Med 2023;5(3):150-155
DOI: 10.46310/tjim.1285390

Keywords: *COVID-19, US Healthcare, health economics.*

Received: *April 21, 2023;* ***Accepted:*** *July 3, 2023;* ***Published Online:*** *July 29, 2023*

How to cite this article: *Mahmood T, Meda A, Trivedi S, Anamika F, Garg S, Jain R. Impact of the COVID-19 Pandemic on the US healthcare system. Turk J Int Med 2023;5(3):150-155. DOI: 10.46310/tjim.1285390*

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INTRODUCTION

The first recognisable case of COVID-19 was detected in December 2019 in the Chinese province of Wuhan, according to the World Health Organization (WHO), and the disease was designated a worldwide emergency on January 30, 2020.[1] The United States had difficulty in mobilising and coordinating its health insurance system. With 29 million people uninsured and 39% of households report not having $1,000 in emergency savings, the US faced the dual threat of overworked medical facilities and a major crisis of access for patients who needed testing and treatment for COVID-19.[2] To protect patients from the financial consequences of COVID-19, the United States launched a multifaceted plan, including a federal requirement that private insurers and employers cover the total cost of testing, as well as funds for the Health Resources and Services Administration (HRSA) to compensate (at Medicare rates) the expenses of COVID-19 testing and treatment for those who are uninsured. The health insurance sector waived patient cost-sharing requirements for COVID-19 therapy for most privately insured patients. Congress created a $178 billion Provider Relief Fund in March 2020 to address unreimbursed COVID-19 treatment expenditures (e.g., personal protective equipment, increased staff time) and other income losses during the pandemic.[2] Healthcare spending in the United States grew 9.7 per cent to reach $4.1 trillion in 2020; this was due to the COVID-19 epidemic causing a 36.0 per cent rise in federal healthcare spending in 2020.[3] Hospitals required to create more negative pressure rooms, recruit more workers, pay overtime to staff, train staff, acquire personal protective equipment (PPE), and handle PPE shortages due to the significant rise in COVID-19 hospitalised patients. All non-emergency and elective surgeries and treatments were cancelled to free up hospital staff and beds. Hospitals nationwide became financially stretched due to missed income from cancelled outpatient office appointments, elective treatments, and elective surgery.[4] The physicians working in the Veteran Affairs (VA), mostly in procedural-based specialities, were less impacted by the lost revenue in the face of cancelled procedures, as they did not participate in the fee-for-service business model like their private-sector counterparts. Furthermore, because the VA is a nationwide institution, the agency might modify its supply chain to deliver the necessary equipment and PPE to the areas severely afflicted by the pandemic. To assist the American people, the VA provided 16,500 acute care beds, 3,000 ventilators, 1,000 isolation rooms, and 4,000 deployable disaster emergency volunteers nationally.[5]

DISCUSSION

Undoubtedly, COVID-19 has had a tremendous impact on healthcare systems. Focusing on the economic impact, the hospital's expenses in 2022 increased by $135 billion compared to 2021 expenses. This includes the projected upstroke in labour expenses of hospitals by $86 billion and non-labour costs projected to increase by $49 billion. There was - a 102% change in hospitals' operating margins in January- June 2022 compared to 2019. This indicates the worst year for hospitals since the beginning of the pandemic, particularly due to the omicron COVID-19 surge and lack of further funding for the hospitals.[6] One reason for financial shortcomings due to COVID-19 can be due to non-emergent surgical cancellation. The elective inpatient and outpatient surgical procedures before the COVID pandemic in the US cost $147.2 billion per year and $195.4 to $212.2 billion in hospital reimbursement. Early in the pandemic, a loss of approximately $16.3 to $17.7 billion per month was reported in reimbursement, which was done to ensure adequate required supply and staff for the COVID-19 patients.[7] Another reason for the financial strain was the closing of outpatients appointments because of social distancing protocols and increased anxiety among patients. This has led to the practice of virtual telemedicine across the entire country. There was also an impact seen on personal care/ nursing facilities. With more than 40% of the deaths being related to the contracted COVID-19 virus, 80% of COVID deaths in the United States affect the population 65 years of age or older.1 According to the Kaiser Family Foundation (KFF), residents or staff at these facilities accounted for more than 40% of all COVID-19-related deaths.8 For this reason, multiple acts/ reliefs, such as the Coronavirus Aid, Relief, and the Economic Security (CARES) Act, provide the medication and facilities for the suppression of the COVID-19 virus. A total of 5 billion dollars was allocated to long-term care facilities and state veterans' homes through the Coronavirus Aid, Relief, and Economic Security (CARES) Act to support enhanced infection control measures, increased testing, hiring additional staff, and providing additional services.[1]

As a result of the stress and burnout caused by

the pandemic, a considerable number of healthcare employees chose to leave health care, finding jobs in other sectors.[9] Physician burnout negatively impacts the quality of patient care, patient satisfaction, and the healthcare system.[10] Conditional burnout scores increased in wave two among all specialities except for Emergency medicine, with the largest increases observed among Hospitalists and primary care workers.[11] Several nurses were driven to leave their jobs because of the overburden of work combined with shortages of personal protective equipment and the psychological impact of many COVID-19 deaths. Along with healthcare workers, the unemployment rate of people from other professions also significantly decreased. Recent reports showed unemployment among healthcare professionals was 3.18% during the pandemic, while it was 6.13% among non-healthcare workers.[12] The National Academy of Medicine found that burnout had reached "crisis levels" among the U.S. health workforce, including the prevalence of burnout symptoms ranging around 35-54% of nurses/ physicians and 45-60% of medical students/ residents and this also negatively impacts the economic factor of the healthcare system as well: annual burnout-related turnover costs are nearly $9 billion for nurses and around $2.6 to $6.3 billion for physicians. Total health employment in February 2020 was 16.5 million and drained to 14.9 million in April 2022. During staff shortages in the hospitals, Travel Nurses are approached, and they assist healthcare practices for a short period.[13] According to the New York Times, one of the biggest staffing businesses, Aya Healthcare, was scheduling 3,500 Registered Nurses weekly in the summer of 2021, more than double the amount before the pandemic.[14] Studies demonstrate that the COVID-19 pandemic has not impacted healthcare workers equally. Reporting showed that nurses undertook 50% more psychological stress during the COVID-19 outbreak than medical doctors. Nurses began to display signs of mental illness: post traumatic stress disorder, depression, and anxiety. These mental health disorders for nurses were prevalent in Western and Asian countries. Furthermore, on average, nurses have more contact with Covid patients than medical doctors. This means they are more exposed to ethical dilemmas, illness, and even death. Looking at this statically, 14/19 studies demonstrate that nurses scored higher on an anxiety test (compared to doctors); also, 13/18 studies show that nurses are more likely to develop a Post Traumatic Stress disorder. This will lead to an increasing burnout rate for nurses.[15] Healthcare professionals working in intensive care units, who are already more susceptible to anxiety, depression, burnout, and post traumatic stress disorder even before the pandemic, saw much more dramatic results. An increase in the prevalence of moderate to severe anxiety (31%) and depression (46%), as well as the risk of post traumatic stress disorder (46.7%), was observed in a US-based nationwide survey of critical care nurses (n: 485), which was higher compared to the surveys conducted before the pandemic, attributing it to the additional barriers faced during the pandemic like shortage of PPE, low social and administrative support from work.[16] It was evident that the healthcare workers who received partial support from the hospital administration exhibited lower levels of post traumatic stress disorder, anxiety and depression. This correlation establishes a clear connection between system-related factors (resources like PPE and administrative support) and the mental well-being of the employees.[17]

There have also been increases in the median pay of physicians and advanced healthcare workers. According to data from the physician flash report, more than 200,000 employed physicians and advanced practice providers in more than 100 different specialities have experienced an increase in the median net income per provider. Full-Time Equivalent has raised gradually from $354,566 in Q3 2020 to $389,017 in Q3 2022.18 Nurses also saw an exponential shift in their average pay. Travel nurses during the pandemic can earn between $5,000 and $20,000 per week, compared to regular nurses at hospitals, who, on average, made $1,400 per week before the outbreak. Travel nurses received more pay as well as more scheduling flexibility.19 Increased pay during the pandemic came with the price of getting the infection. During the first six months of the COVID-19 pandemic, a significant number of healthcare workers had a 15.1% chance of being hospitalised due to infection. They also had a 1.5% mortality rate.[1]

As per medical protocol, guidelines have also changed for medical professionals. To assist patients with suspected COVID-19 and confirmed COVID-19, a new healthcare system was created: the nursing triage, the COVID Frontline Care Team, Remote Patient Monitoring, Pediatric Patient Monitoring, the Pediatric COVID Care team, and the COVID-19 Care Clinic. This system was established to keep

COVID-19 exposure at a minimum for uninfected people and healthcare workers. The CCC (Covid Care Clinic) also had particular staffing: 2 medical doctors, two in-charge nurses, and an operations manager. The clinical preparations to keep the virus from spreading consisted of disposable paper table coverings and cloth pillowcase coverings being replaced after the examination. Nurse equipment was placed in the closet because it was susceptible to pathogenic exposure.

Furthermore, swabs, hand sanitiser, and wipes were placed in rooms to inhibit viral exposure. COVID-19 also changed the uniforms of most healthcare workers. Now most healthcare workers must follow PPE protocol (personal protective equipment). This includes but is not limited to gowns, surgical face masks, face shields, gloves, and goggles.

Furthermore, patients were not allowed to wait inside the waiting rooms. The protocol was a nurse, in the proper PPE attire, will escort them to their examination room. However, to reduce the potential COVID-19-positive patients, COVID-19 testing was not done at the CCC.[20]

Speaking on the economic standpoints of multiple healthcare systems is essential to see how COVID-19 has impacted the healthcare system. Kaiser Permanente, an American integrated managed care consortium, had a profit of $2 billion for the first quarter of the year in 2021. It also sustained an increase of 12,900 in its health plan membership. The operating revenues of Kaiser Permanente were $23 billion, with a total expense rate of $22.2 billion. It also sustained a $1.1 billion loss in 2020.21 Another healthcare system, Common Spirit, accelerated COVID-19 rebound with $539 million in operating gains for 2021. However, it also sustained a $145 million loss in 2020 due to the COVID-19 crisis turnaround. Finally, the Chicago-based Catholic health system's financial report showed revenues of $1.1 billion for the nine months ending until March 2021. This was rebounded in 2020 by the drained revenue (around $332 million).22 Testing was required to prove that a person is COVID-19 negative or positive. The different types of COVID testing are called molecular, antigen, and antibody testing.[23] Public places such as airports, restaurants, and other festivals require proof of a COVID test. These tests play a significant role in regulating the economy.[24] The cost of testing in a hospital setting would be $5 on average and $20 for confirming the validity of the test. However, antigen tests can be $0.20. This proves that hospitals are making a significant margin of profit performing these tests.[25] Nevertheless, hospitals faced a new upcoming expense as the infection got serious; admission in the ICU went up, and oxygen shot up along with the usage of Ventilators. The median cost of ventilation was between ($41,510 and $47,454).[26]

CONCLUSIONS

COVID-19, which started in the Chinese province of Wuhan, tremendously affected the US healthcare system. It affected not only the general population but also the hospitals and healthcare workers. The hospitals had to cancel all non-emergency and elective procedures and treatments, hire additional workforce, pay overtime to staff, train staff, obtain PPE, and address PPE shortages. Cancellation of non-emergency surgeries and the closing of outpatient appointments because of social distancing protocols were the main reasons for financial shortcomings due to COVID-19. This has led to the practice of virtual telemedicine across the entire country. As a result of the stress and burnout caused by the pandemic, several nurses were driven to leave their jobs. The overburden of work combined with shortages of personal protective equipment and the psychological impact of so many COVID-19 deaths, many healthcare employees chose to leave healthcare, finding jobs in other sectors. Nurses began to display signs of mental illness: PTSD, depression, and anxiety, and these disorders for nurses were prevalent in both Western countries and Asian countries. Furthermore, on average, nurses had more contact with COVID-19 patients than medical doctors. Kaiser Permanente, Common Spirit, and the Chicago-based Catholic health system are some healthcare systems with financial benefits.

Acknowledgment

None

Conflict of interests

None

Authors' Contribution

Study Conception: TM, AM, ST, FA, SG, RJ; Study Design: TM, AM, ST, FA, SG, RJ; Supervision: FA, SG, RJ; Statistical Analysis and/or Data Interpretation: TM, AM, ST; Literature Review: TM, AM, ST, FA, SG, RJ; Manuscript Preparation: TM, AM, ST, FA,

SG, RJ and Critical Review: TM, AM, ST, FA, SG, RJ.

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