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The Economic Impact of COVID-19 on the Healthcare System in India, China, Brazil and the USA

Jeeval Chadha¹

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¹ B.A. Hons. Economics, Daulat Ram College, University of Delhi

Abstract

The COVID-19 epidemic is putting international hospitals and healthcare facilities under severe financial strain. In this paper, we analyse the impact in major countries including but not restricted to India, China, Brazil and USA. These impacts in these countries have been analysed mainly because they depict the trends that followed in different regions of the world. The economic impact of COVID-19 on the US and worldwide hospitals, healthcare facilities, surgery, and surgical results will be discussed in this study. The American Hospital Association forecasts that hospitals and healthcare systems in the United States will lose \$202.6 billion in income, or \$50.7 billion every month. Furthermore, providing an effective healthcare response to COVID-19 might cost low- and middle-income nations US\$52 billion (equal to US\$8.60 per person) every four weeks. In the context of the United States' greatest daily COVID-19 new cases, this load will have an impact on patient care, operations, and surgical results. World economic growth is expected to slow by over 8% this year, with poorer nations bearing the brunt of the damage, according to the World Bank. The United Nations estimates that it will cost the global economy roughly \$2 trillion this year. Overall, a lack of readiness contributed significantly to the difficulties faced by healthcare facilities all across the world. It is of utmost importance for the discussed countries to facilitate an amicable and efficient use of the given limited healthcare resources present with them, to minimise the economic as well as public loss.

Keywords: *economy, healthcare, emergency response, international, hospitality*

1.0 Introduction

The 7.5 billion people on the planet could not have foreseen COVID-19's massive effect two years ago. The first recognizable case of COVID-19 was discovered in December 2019 in China's Wuhan region, and the disease was designated a worldwide emergency on January 30, 2020, according to the World Health Organization (WHO) (*Temporal Dynamics in Viral Shedding and Transmissibility of COVID-19*, 2020). In this paper, we analyse the impact in major countries including but not restricted to India, China, Brazil and USA. These impacts in these countries have been analysed mainly because they depict the trends that followed in different regions of the world. The economic impact of COVID-19 on the US and worldwide hospitals, healthcare facilities, surgery, and surgical results will be discussed in this study.

In 2020, Covid-19 is estimated to be the third biggest cause of mortality in the United States; the pandemic is expected to result in a 3.3 trillion dollar shortfall, or roughly 15% of the country's GDP(CBO's *Current Projections of Output, Employment, and Interest Rates and a Preliminary Look at Federal Deficits for 2020 and 2021, 2020*). Since the epidemic began, over 51% of Americans have reported a loss of work income, with the unemployment rate skyrocketing to 14.7 when the outbreak began(CBO's *Current Projections of Output, Employment, and Interest Rates and a Preliminary Look at Federal Deficits for 2020 and 2021, 2020*). Americans, particularly young adults, have struggled to meet rent and mortgage payments due to missed salaries and jobs throughout the year. Due to a lack of time to save capital to survive an economic standstill, the young adult generation of America, particularly minorities, is the most vulnerable to these economic repercussions. (*Coronavirus Disease 2019 (COVID-19) and HIV Spotlight the United States Imperative for Permanent Affordable Housing, 2021*). Covid-19 influences foreign relations as well. COVID-19 started in China, which accounts for a considerable proportion of global exports; as a result, numerous nations lost rapid access to essential products when the Chinese government imposed a mandatory quarantine. COVID-19 exposes the fact that many nations, particularly impoverished countries, rely largely on China for many of their socioeconomic necessities. Unfortunately, some of these essential products were lost, including facemasks, respirators, pharmaceutical drugs, and other raw materials needed to battle the infection. As a result, in certain countries, the absence of Personal Protective Equipment (PPE) has aided viral propagation and intensified the epidemic. Several economic issues arising due to the pandemic such as the closure of businesses, and foreign trade disruptions are analysed in this study. From a global economic viewpoint, the World Bank predicts that global growth would slow by over 8% this year, with poorer nations bearing the brunt of the damage, and the UN estimates that it will cost the world economy roughly \$2 trillion this year(Wu, 2020). The influence of Covid-19 on the US and foreign healthcare systems will be discussed in this study.

This study discusses the effect that the global pandemic has had on the USA healthcare facilities in addition to its impact on countries like India, China, Singapore and Brazil. It takes into account how the resources have been differently put to use in different countries. More importantly, the paper describes how the discussed countries have been economically impacted during the period of the pandemic.

2.0 Impact on USA Healthcare Facilities

Hospitals are required to establish extra negative pressure rooms, employ a backup workforce, pay overtime to staff, train staff, purchase PPE, and solve PPE shortages to prepare for a rise of COVID -19 hospitalized patients. To free up necessary hospital staff and beds, all non-emergent and elective operations and treatments were cancelled. Due to social distancing techniques and patient concerns associated with COVID-19, practically all outpatient visits were cancelled and replaced with virtual telemedicine appointments. (*The Financial and Employment Effects of Coronavirus Disease 2019 on Physicians in the United States*, 2020). Hospitals across the country were financially stretched as a result of higher COVID-19 expenses and lost income due to the cancellation of outpatient office visits, elective treatments, and elective operations. (*The Financial and Employment Effects of Coronavirus Disease 2019 on Physicians in the United States*, 2020)

In the United States, academic medical centres were given special attention. To develop and expand its treatment facilities, they have taken on a large amount of debt during the previous few decades. Academic medical centres have served as a safety net healthcare system in the United States while simultaneously pursuing various academic goals, making them one of the most expensive healthcare systems in the country with poor operating margins. (*Colenda et al.*, 2020). These institutions were disproportionately affected by COVID-19 because of their pre-pandemic economic weakness and reliance on clinical income to sustain financial flow. Many of the same issues beset Veterans Affairs hospitals, but their financial effect was less severe due to their capacity to operate as a well-organized, non-profit national medical centre. Because they did not participate in a fee-for-service business model like their private-sector counterparts, physicians in largely elective and/or procedural-based specialities working for the VA had less financial concerns about lost income in the face of cancelled treatments. Also, because the VA is a nationwide system, it may change its supply chain to provide the necessary equipment and personal protective equipment to the areas severely afflicted by the epidemic.

COVID-19 has had a disproportionately large impact on nursing homes and long-term care institutions, with more than 40% of all deaths attributable to the pandemic occurring among residents or employees of these facilities. (*Rising from the COVID 19 Crisis: Policy Responses in the Long-Term Care Sector*, 2021) In the United States, eight out of ten

COVID-19 fatalities occur in people over the age of 65. As a result, the Coronavirus Aid, Relief, and Economic Security (CARES) Act awarded nearly \$5 billion to long-term care facilities and state veteran's homes. This funding supported improved infection control measures, increased testing, the hiring of additional staff, and the provision of additional services to residents, such as technology that allows nursing home residents to communicate with their families during times when outside visitors are restricted to these long-term care facilities. (Sullivan-Marx, 2020). While the country's testing capacity had grown, most states' percentage of tests with positive diagnostic results increased (Figure 1.1). Hospitalizations steadily rose for weeks, indicating that the illness was spreading (Figure 1.2). the figures are from April 2020 to November 2020

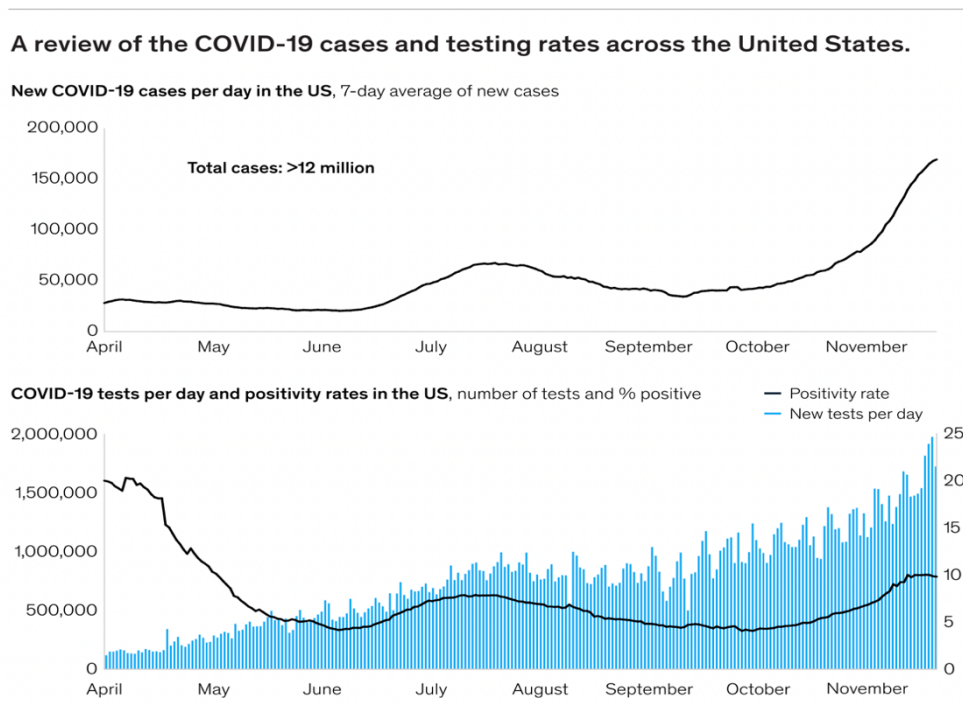


Figure 1.1

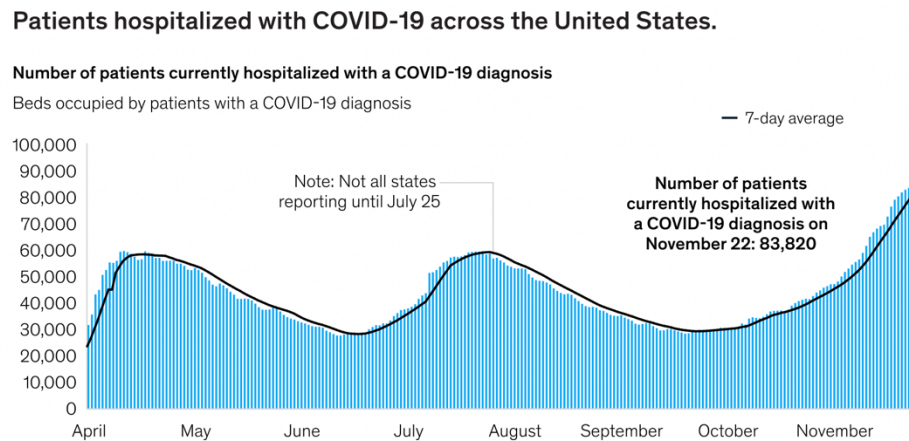


Figure 1.2

3.0 Global Impact

The COVID-19 pandemic has expanded at an alarming rate, infecting millions and bringing economic activity to a halt as governments enforced harsh mobility restrictions to stem the virus's spread. The economic harm is already visible as the health and human toll rises, and it constitutes the world's worst economic shock in decades.

The June 2020 Global Economic Prospects report details the pandemic's immediate and near-term effects, as well as the long-term damage it has caused to economic prospects. Using market exchange rate weights, the baseline prediction predicts a 5.2 per cent drop in global GDP in 2020, the deepest global recession in decades, notwithstanding governments' unprecedented attempts to combat the crisis with fiscal and monetary policy support. Deep recessions produced by the epidemic are projected to leave long-term scars due to decreased investment, human capital depletion due to delayed job and schooling, and fragmentation of global commerce and supply chains. (*Global Economic Prospects*, 2022)

India

On January 30, 2020, the first case of COVID-19 in India was recorded in Trissur, Kerala. Initially, the nation implemented a virus-containment policy, which included steps including quarantining persons travelling from high-transmission areas, isolating affected people, tracking contacts, and restricting people's movement from areas with high caseloads. As the number of cases grew, it became clear that sustained local transmission played a role in the virus's spread, and attention moved to mitigating measures as a method of combating the

infection (Varghese & John, 2020). India imposed limitations on public meetings, air travel both within the country and abroad, and the closure of public locations, similar to China's processes. (Kaur & Sonali, 2020)

These limitations put further strain on an already slow economy, with direct severe consequences in the agricultural, manufacturing, and service sectors. The virus spread among the nations with which India trades and those countries ceased manufacturing (Rakshit & Basistha, 2020). This had a substantial impact on Indian exports. Furthermore, the epidemic and subsequent lockdowns have had a significant psychological impact on many people in India, aggravating anxiety and depression symptoms. Suicide has been reported in some addicts who have been unable to get addictive drugs (Kaur & Sonali, 2020). This could be attributed to the grave financial crisis that marked the duration of the pandemic in India. The eventual impact of COVID-19 on India remains to be determined as the virus continues to spread over the world and some parts of the country remain under lockdown.

The epidemic has struck the services industry the hardest, particularly those that entail human interaction. Following a decrease of 8.4% last year, this industry is expected to rise by 8.2% this fiscal year. So far in 2021-22, both goods and service exports have been extraordinarily robust, but imports have also rebounded substantially, thanks to increased domestic demand and higher international commodity prices. The Indian economy is in an excellent position to expand at 8.0-8.5 per cent in 2022-23, with the vaccination programme has reached the majority of the population, the economy regaining pace, and the expected long-term effects of supply-side changes in the pipeline. Despite this, the global situation remains unstable. At the time of writing, a fresh wave in the shape of the Omicron variety was sweeping the globe, inflation had risen in most nations, and major central banks were starting the cycle of liquidity withdrawal. This is why it's critical to assess India's macroeconomic stability indicators and their potential to protect the country from the aforementioned risks. (*Economic Survey 2021–22*, 2022)

Singapore

The reaction to the epidemic in Singapore has been lauded as one of the best in the world. The country was one of the first to report COVID-19 instances, with the first cases showing in December 2019, and was initially second only to China in terms of overall cases. The

SARS-CoV epidemic in 2002 showed several flaws in Singapore's ability to respond to pandemics, and it catalysed for the government to address those flaws. The National Centre for Infectious Diseases (NCID) and 900 fast response public health preparedness clinics were created across the country (PHPCs). Exercises were undertaken regularly to mimic the arrival of a pandemic. As a result, Singapore was well prepared to conduct mass screenings of anyone who could be affected. They have made a name for themselves as a leader in testing and contact tracing. The Yong Loo Lin School of Medicine at the National University of Singapore (NUS) has created a fun series of comics called "COVID-19 Chronicles" that convey vital information about the virus in a way that most people can understand. These kinds of messages have been widely broadcast around the country and have received international recognition.

Singapore also used many of the same strategies as other nations that had outbreaks, including limiting the size of meetings, increasing physical separation, restricting travel, and screening and quarantining visitors. Violations of these criteria resulted in severe fines. Surprisingly, Singapore did not issue an official lockdown or close schools until April 28, 2020, when a spike in cases prompted a 21-day order. It had been some months after the virus had been discovered in the nation (*Kuguyo et al., 2020*). Despite the country's success in managing the virus's contagious load, due to the global economy's interconnection, Singapore was not spared the pandemic's economic impact, reporting a 13.2 per cent drop in GDP in the second quarter of 2020 compared to the previous year. (*Iwamoto, 2021*) The COVID-19 epidemic has wreaked havoc on worldwide economic activity, causing demand and supply shocks in Singapore's economy.

Given the rapidly changing scenario, officials should use high-frequency and real-time economic metrics to track COVID-19's impact on the Singapore economy. COVID-19 has had a huge economic impact on Singapore. Those industries that rely on foreign travel, such as air transportation, lodging, and other tourism-related industries, have been the worst hit. Domestic consumption has been cut back as a result of increasingly tougher safe distance regulations, which have hurt consumer-facing industries including retail and food services. Outward-oriented industries such as manufacturing and wholesale commerce have been hit by a drop in foreign demand and supply chain disruptions, while domestically-oriented sectors such as construction and real estate have been hit by negative spillovers from the

domestic economy. However, with the surge in demand for online commerce and services, there are some bright spots in the economy. To combat the spread of COVID-19, worldwide and local travel restrictions have resulted in a dramatic drop in tourist arrivals to Singapore and foreign air travel in general. This has had a significant impact on the lodging, air transportation, and arts, entertainment, and leisure sectors, as well as tourism-related components of the business services sector (e.g., travel agents, tour operators, and meetings, incentives, conventions, and exhibits organisers). The COVID-19 epidemic has resulted in decreased domestic consumption and travel, affecting consumer-facing industries such as food services, retail commerce, and land transportation.

China

After the first cases were confirmed in Wuhan in December 2019, China became the pandemic's initial epicentre. The Chinese authorities put Hubei, the province where Wuhan is located, under heavy lockdown within a month. Buses, subways, and ferries all came to a halt, drastically restricting travel inside the metropolis of roughly 9 million citizens (*Gan et al., 2020*). Because the airports and train terminals were blocked, all transportation into and out of the city and province was forbidden. Similar but less stringent restrictions on inter-city and intra-city travel were enforced across the remainder of China. (*Gan et al., 2020*). While these methods helped halt the virus's transmission, they had unintended repercussions

In the first quarter of 2020, China's GDP shrank by 6.8%, the first fall in 30 years. In addition, many inmates' mental health suffered as a result of the rigorous lockdowns. The last of China's lockdowns was removed in April 2020, and the rest of the world is keeping a close eye on the nation as it returns to some semblance of normalcy. (*Cheng, 2022*) In the short term, China's economy is anticipated to decline significantly before rebounding later this year. Manufacturing and other services have been disrupted due to fear of illness and measures to minimise transmission. The epidemic is expected to affect China's healthcare system, employment, and a variety of other economic sectors.

The recent sharp rise in daily COVID-19 infections reported by China is alarming in terms of disease containment expenses. Manufacturers have warned of shipment delays as a result of China's zero-COVID policy, putting strain on global supply chains. According to a US expert, the zero-tolerance strategy produces declining rewards when compared to the

Omicron variant's quick infection rates. Concerns over China's development prospects have fueled market volatility, with Chinese equities closing at 21-month lows on March 15, 2022, and oil prices falling to a two-week low.

Brazil

COVID-19 didn't arrive in Brazil until late February 2020, yet it rapidly gained international attention. In contrast to the directives given by federal governments in other countries, Brazil did not have a national reaction to the virus; instead, local States/Federative Units (FU) launched interventions (*Garcia & Duarte, 2020*). President Jair Bolsonaro has been chastised for his seeming indifference to the illness. He frequently spoke out against FU-imposed lockdowns, gushed over the dubious remedy hydroxychloroquine, and showed a general contempt for the pandemic's severity. The government's lack of consistency in its message added another degree of difficulty to an already difficult struggle.

Approximately 13 million Brazilians live in densely populated favelas with insufficient access to potable water, making physical separation and hygiene rules nearly hard to follow (*COVID-19 in Brazil: "So What?" 2020*). The epidemic has had a significant impact on Brazil's economy, as it has in other regions of the world. The stock market in So Paulo fell about 15% from March 9 to 13, its largest weekly decline since the 2008 financial crisis. Furthermore, GDP decreased by 11.4 per cent in the second quarter of 2020 compared to the same period the previous year (*Melo, 2020*). Brazil has approximately 4 million confirmed cases and 125,000 deaths as of September 2020, second only to the United States in overall cases and sixth in deaths per capita (*Melo, 2020*). The social and economic crisis caused by the COVID 19 pandemic has left 83.5% of Brazil's labour market vulnerable. But like many other developing countries, Brazil was already suffering from a state of emergency before the COVID 19 pandemic. However, in the case of Brazil, the poor recovery from the 2015/16 economic crisis combined with the new coronavirus epidemic caused a perfect storm. As of early 2020, Brazil had an unemployment rate of 12.6%, a disappointing hidden unemployment rate of 5%, and informal and rapidly expanding inequality. In the lower half of the social pyramid, the 2015 crisis never ended. Since then, the poorest people have lost their income every year. (*Barbosa, 2020*)

4.0 Impact on Healthcare Institutions Across the World

COVID-19 has had a profound influence on practically every aspect of the economics of most nations throughout the world, not least the healthcare sector, which has faced massive hurdles in coping with and responding to the epidemic. The challenges that healthcare facilities throughout the world have faced are mostly due to a lack of readiness. Personal protection equipment (PPE) for healthcare personnel was in insufficient supply in many cases. Only 37.4 per cent of Pakistani healthcare professionals had access to N95 respirators, 34.5 per cent to gloves, 13.8 per cent to face shields or goggles, and 12.9 per cent to complete suits or gowns, according to one research. In Jordan, just 18.5 per cent of clinicians reported having access to all essential PPE, according to one research (*Suleiman, 2020*). PPE shortages hit even the United States, a country whose healthcare system is frequently linked with an almost endless availability of medical equipment.

Nearly 15% of physicians said they didn't have access to N95 respirators, over 20% said they didn't have gloves, over 12% said they didn't have face shields, and about 50% said they didn't have complete suits or gowns. Furthermore, about 7% of physicians said they were obliged to care for COVID-19 patients without sufficient PPE, and over 80% said they reused parts of their PPE. (*Jacobs et al., 2020*) Many healthcare facilities around the country turned to the public for contributions of personal protective equipment, and enterprising folks created inventive ways to make PPE out of everyday materials. Similarly, there were significant shortages of ICU beds and ventilators in hospitals across the world.

Most healthcare facilities across the world could not do thorough testing, making it difficult to diagnose and isolate illnesses. Lockdowns throughout the world interrupted supply networks, exacerbating the shortages. The care of non-COVID-19 sickness has suffered as a result of the pandemic's intensive attention. Since the COVID-19 pandemic began, preventive and treatment services for non-communicable diseases (NCDs) have been significantly interrupted, according to a WHO assessment of 155 countries. Healthcare staff who generally dealt with NCDs were reallocated to help the COVID-19 response as the virus expanded. Furthermore, operations and appointments that were not deemed urgent or emergent were postponed per the criteria of several public health organizations. Reduced public transportation availability made it difficult for many people to go to their booked appointments. Patients with major illnesses including cancer, diabetes, and

the cardiovascular disease were frequently unable to obtain the treatments and medications they required. These impacts were especially noticeable in low-income nations, which were obliged to dedicate already limited resources to combat the epidemic (*Ahmed et al., 2020*).

Reduced access to services such as prenatal and vaccination programs, and screening for hypertension, TB, HIV, and vector-borne diseases was discovered in a survey of seven slums in Bangladesh, Kenya, Nigeria, and Pakistan, all of which commanded substantial attention before the epidemic (*Ahmed et al., 2020*). Furthermore, healthcare costs have risen while household incomes have dropped.

Fortunately, the flaws identified by COVID-19 have motivated healthcare organizations throughout the world to devise innovative strategies to guarantee that vital care is not delayed or denied during this pandemic or in any future similar situation. Alternative solutions, such as telemedicine, have swiftly gained traction in healthcare institutions throughout the world, helping to mitigate the impact of the pandemic on NCD care. (*Mahmood et al., 2020*)

5.0 Economic Impact

The COVID-19 epidemic has had a significant impact on the world economy, but as new cases drop in numerous countries, the Canadian Society of Cardiac Surgeons has issued suggestions to help cardiac surgery clinics avoid additional financial damage (*Hassan et al., 2020*). These recommendations are referred to as a "ramp-up," since they include progressively increasing the number of elective cardiac surgery operations while adhering to all local public health regulations. Experts believe that this gradual return to normalcy will help offset some of COVID-19's devastating financial impact on cardiac surgery clinics.

In terms of trauma and orthopaedic surgery, a German team performed a nationwide online cross-sectional poll among trauma and orthopaedic doctors, which acknowledged the pandemic's "serious budgetary restrictions" on these two surgical specialities. Self-employment, unsurprisingly, was shown to be an independent positive predictor of financial stress, a variable the study's multiple regression model dubbed "depletion." Based on the results of the multiple regression model, the authors propose that self-employed trauma and orthopaedic doctors should get more support since they are disproportionately affected financially by the epidemic. This group, like their cardiac surgeon counterparts,

believes that the halt of elective surgeries contributed significantly to the pandemic's financial impact on their specialities (*Randau et al., 2020*). According to the statistical study of this group, skilled trauma and orthopaedic surgeons were less concerned about financial loss than non-operative orthopaedic practitioners. According to the findings, 30% of participants believe they would be compelled to leave practice as a result of the epidemic, and 63 per cent would like additional financial assistance from the country's health insurance providers. However, there is a silver lining in the form of telemedicine, with 44% of participants expecting its value to rise in the future. (*Reforming America's Healthcare System Through Choice and Competition, 2020*)

Of course, the survey's psychometrics are clouded by the unusual conditions in which it was created. During the pandemic, a successful Swedish cosmetic surgeon acknowledged a 29 per cent reduction in earnings at his 22-year-old private practice in an editorial published in the "Aesthetic Surgery Journal". He also claimed a 100 per cent income loss at a private practice he founded two years before the epidemic in Italy. "...terrible and possibly irreversible damage to our livelihoods...", according to the authors of this article, because of an international government ban on elective surgeries. For those plastic surgeons who have decided to exclusively practice in the aesthetic field, this means their practice is now effectively banned in most countries. (*Effects of COVID-19 on Plastic Surgery Practices and Medi-Spas in Different Countries, 2020*)

Finally, the first-ever effort to emphasize COVID-19's major economic effect on Latin American radiation oncology therapy services is described in a partnership between US-based and Latin American healthcare teams (*Martinez et al., 2020*). According to survey data from 15 Latin American nations (including Argentina, Aruba, and Costa Rica, among others), less than 3% of radiation oncology clinics closed during the pandemic, and over half of the centres had a revenue decrease of at least 20%. The American Society for Radiation Oncology (ASTRO) survey was circulated across Latin America to determine the pandemic's economic effect in an area where radiation oncology is already a chronically underserved branch of medicine. This group also emphasized the need for telemedicine in the future of Latin American radiation oncology.

5.0 Conclusion

As the COVID-19 epidemic continues to spread throughout the globe, it is leaving a horrific trail of destruction in its wake. Aside from the projected increase in the number of illnesses and deaths, the virus has had an insidious effect on economies all around the world. Following the proclamation of COVID-19 as a pandemic in March 2020, worldwide trade ground to a standstill as travel restrictions were enforced, and individuals all across the globe followed social distancing recommendations encouraging them to stay as close to their homes as possible. After the initial cases were confirmed in Wuhan, China became the pandemic's original epicentre.

The virus then spread to numerous nations, including the United States, India, Brazil, and Singapore, affecting low- and middle-income countries and individuals disproportionately. The challenges that healthcare facilities throughout the world have faced are mostly due to a lack of readiness. PPE for healthcare professionals was in insufficient supply in several cases. COVID-19's flaws have spurred healthcare organizations throughout the world to design new vital care for patients, which is encouraging. Alternative tactics including telemedicine, social distance, mask-wearing, handwashing, and quarantining have all aided in reducing the consequences of the COVID-19 pandemic and will likely continue to affect healthcare in the future.

References

Ageing in America: How COVID-19 Will Change Care, Coverage, and Compassion. (2020). Nursing Outlook.

[https://www.nursingoutlook.org/article/S0029-6554\(20\)30636-9/fulltext](https://www.nursingoutlook.org/article/S0029-6554(20)30636-9/fulltext)

Ahmed, S. S. A. K. (2020, August 1). *Impact of the societal response to COVID-19 on access to healthcare for non-COVID-19 health issues in slum communities of Bangladesh, Kenya, Nigeria and Pakistan: results of pre-COVID and COVID-19 lockdown stakeholder engagements.* BMJ Global Health. <https://gh.bmj.com/content/5/8/e003042>

As normalcy returns, can China keep COVID-19 at bay? (2020). Science. <https://www.science.org/doi/10.1126/science.368.6486.18>

Barbosa, R. (2020, June 18). *Efeitos do desemprego, do Auxílio Emergencial e do Programa Emergencial de Preservação do Emprego e da Renda (MP 936) sobre a renda, a pobreza e a desigualdade durante e depois da pandemia (Effects of Unemployment, Basic*

Emergency Income and the Emergency Employment and Income Preservation Program (MP 936) on Income, Poverty and Inequality during and after the Pandemic in Brazil).

https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3630693

Can India stay immune enough to combat the COVID-19 pandemic? An economic query. (2020). Wiley Online Library. <https://onlinelibrary.wiley.com/doi/10.1002/pa.2157>

Care Churn — Why Keeping Clinic Doors Open Isn't Enough to Ensure Access to Abortion. (2020). The New England Journal Of Medicine.

<https://www.nejm.org/doi/10.1056/NEJMp2013466>

CBO's Current Projections of Output, Employment, and Interest Rates and a Preliminary Look at Federal Deficits for 2020 and 2021. (2020). Congressional Budget Office. <https://www.cbo.gov/publication/56335>

Cheng, E. (2022, March 16). *China's Covid spike: What we know and don't know about its economic impact.* CNBC.

<https://www.cnbc.com/2022/03/16/what-we-know-about-the-economic-impact-of-chinas-covid-spike.html>

Colenda, C. C., Applegate, W. B., Reifler, B. V., & Blazer, D. G. (2020). COVID-19: Financial Stress Test for Academic Medical Centres. *Academic Medicine*, 95(8), 1143–1145.

<https://doi.org/10.1097/ACM.0000000000003418>

Coronavirus Disease 2019 (COVID-19) and HIV Spotlight the United States Imperative for Permanent Affordable Housing. (2021). National Library of Medicine.

<https://pubmed.ncbi.nlm.nih.gov/32887980/>

Coronavirus Disease 2019 (COVID-19) and HIV Spotlight the United States Imperative for Permanent Affordable Housing. (2020). Oxford Academic.

<https://academic.oup.com/cid/article/72/11/2042/5901720>

COVID-19: Financial Stress Test for Academic Medical Centres: Academic Medicine. (2020). LWW.

https://journals.lww.com/academicmedicine/Fulltext/2020/08000/COVID_19_Financial_Stress_Test_for_Academic.24.aspx

COVID-19 in Brazil: "So what?" (2020). The Lancet. [https://www.thelancet.com/journals/lancet/article/PIIS0140-6736\(20\)31095-3/fulltext](https://www.thelancet.com/journals/lancet/article/PIIS0140-6736(20)31095-3/fulltext)

COVID's Impact on Radiation Oncology: A Latin American Survey Study. (2020). International Journal Of Radiation Oncology.

[https://www.redjournal.org/article/S0360-3016\(20\)31345-6/fulltext](https://www.redjournal.org/article/S0360-3016(20)31345-6/fulltext)

COVID-19 in India: Moving from containment to mitigation: Indian Journal of Medical Research. (2020). LWW.

https://journals.lww.com/ijmr/Fulltext/2020/51020/COVID_19_in_India_Moving_from_containment_to.8.aspx

Craven, J., & Gordon, S. (2020, April 6). *The Best Health System to React to COVID-19. The American Prospect.*

<https://prospect.org/coronavirus/the-best-health-system-to-react-to-covid-19/>

Economic Survey 2021–22. (2022).

<https://www.indiabudget.gov.in/economicsurvey/doc/eschapter/echap01.pdf>

Effects of COVID-19 on Plastic Surgery Practices and Medi-Spas in Different Countries. (2020). Oxford

Academic. <https://academic.oup.com/asj/article/40/8/N453/5851306>

Epidemiology of Covid-19 in a Long-Term Care Facility in King County, Washington. (2020). *The New England Journal of Medicine.*

<https://www.nejm.org/doi/10.1056/NEJMoa2005412>

Free Access Singapore COVID-19 Pandemic Response as a Successful Model Framework for Low-Resource Health Care Settings in Africa? (2020). Mary Ann Libert, Inc.Publishers. <https://www.liebertpub.com/doi/10.1089/omi.2020.0077>

Gan, Y., Ma, J., Wu, J., Chen, Y., Zhu, H., & Hall, B. J. (2020). Immediate and delayed psychological effects of province-wide lockdown and personal quarantine during the COVID-19 outbreak in China. *Psychological Medicine*, 1–12.

<https://doi.org/10.1017/s0033291720003116>

Gan, Y. (2020). *Immediate and delayed psychological effects of province-wide lockdown and personal quarantine during the COVID-19 outbreak in China | Psychological Medicine.* Cambridge Core.

<https://www.cambridge.org/core/journals/psychological-medicine/article/immediate-and-delayed-psychological-effects-of-provincewide-lockdown-and-personal-quarantine-during-the-covid19-outbreak-in-china/69A7E798EA2214ACB04BEB526A9B4740>

Garcia, L. P. (2020, April 9). *Intervenções não farmacológicas para o enfrentamento à epidemia da COVID-19 no Brasil.* SciELO Brazil.

<https://www.scielo.br/j/ress/a/B7HqzhTnWCvSXXrGd7CSjhm/?lang=pt>

Garcia, L. P., & Duarte, E. (2020). Intervenções não farmacológicas para o enfrentamento à epidemia da COVID-19 no Brasil. *Epidemiologia e Serviços de Saúde*, 29(2). <https://doi.org/10.5123/s1679-49742020000200009>

Global Economic Prospects. (2022, January). World Bank. <https://www.worldbank.org/en/publication/global-economic-prospects>

Global Preparedness Against COVID-19: We Must Leverage the Power of Digital Health. (2020, April 16). JMIR Public Health and Surveillance. <https://publichealth.jmir.org/2020/2/e18980/>

He, X. (2020, August 17). *Reply to: Is presymptomatic spread a major contributor to COVID-19 transmission?* Nature. https://www.nature.com/articles/s41591-020-0869-5?error=cookies_not_supported&code=8b4c1413-50f7-4713-b985-c73edbe21d1e

H.L., K.S., & Z.D. (2020). Expanding access through virtual care: the VA's early experience with Covid-19. *Expanding Access through Virtual Care: The VA's Early Experience with Covid-19*. <https://doi.org/10.1056/CAT.20.0327>

India Fights COVID-19. (2020). American Psychological Association. <https://doi.apa.org/fulltext/2020-61556-003.html>

Interrupting transmission of COVID-19: lessons from containment efforts in Singapore. (2020). Oxford Academic. <https://academic.oup.com/jtm/article/27/3/taaa039/5804843>

Iwamoto, K. (2021, October 4). *Singapore is "soul searching" over the economy as COVID surges*. Nikkei Asia. <https://asia.nikkei.com/Spotlight/Asia-Insight/Singapore-soul-searching-over-economy-as-COVID-surges>

Jacobs, A., Richtel, M., & Baker, M. (2020, March 20). *Doctors Say Shortage of Protective Gear Is Dire During Coronavirus Pandemic*. The New York Times. <https://www.nytimes.com/2020/03/19/health/coronavirus-masks-shortage.html>

Kaur, S., & Sonali, S. (2020). India fights COVID-19. *Psychological Trauma: Theory, Research, Practice, and Policy*, 12(6), 579–581 <https://doi.org/10.1037/tra0000615>

Kuguyo, O., Kengne, A. P., & Dandara, C. (2020). Singapore COVID-19 Pandemic Response as a Successful Model Framework for Low-Resource Health Care Settings in Africa? *OMICS: A Journal of Integrative Biology*, 24(8), 470–478.

<https://doi.org/10.1089/omi.2020.0077>

Mahmood, S., Hasan, K., Colder Carras, M., & Labrique, A. (2020). Global Preparedness Against COVID-19: We Must Leverage the Power of Digital Health. *JMIR Public Health and Surveillance*, 6(2), e18980. <https://doi.org/10.2196/18980>

Martinez, D., Sarria, G. J., Wakefield, D., Flores, C., Malhotra, S., Li, B., Ehmann, M., Schwartz, D. L., & Sarria, G. R. (2020). COVID's Impact on Radiation Oncology: A Latin American Survey Study. *International Journal of Radiation Oncology*Biography*Physics*, 108(2), 374–378. <https://doi.org/10.1016/j.ijrobp.2020.06.058>

Melo, C. M. L. D. E. (2020, August 24). *COVID-19 pandemic outbreak: the Brazilian reality from the first case to the collapse of health services*. SciELO. <https://www.scielo.br/j/aabc/a/RJTggdvvXhWv4HkHcvd3KjK/?lang=en>

Mental Health, Substance Use, and Suicidal Ideation During the COVID-19 Pandemic — the United States, June 24–30, 2020. (2020). Centre for Disease Control and Protection.

https://www.cdc.gov/mmwr/volumes/69/wr/mm6932a1.htm?s_cid=mm6932a1_w

Modelling the effects of Wuhan's lockdown during covid-19, China. (2020). World Health Organisation. <https://www.who.int/bulletin/volumes/98/7/20-254045.pdf>

Nature Editorial. (2020). *Low- and middle-income countries face up to COVID-19*. Nature.

https://www.nature.com/articles/d41591-020-00020-2?error=cookies_not_supported&code=98865937-8cf8-45c6-a8ac-85be3cbaedc3

NCBI - *Early Transmission Dynamics in Wuhan, China, of Novel Coronavirus–Infected Pneumonia*. (2020, March 26). The New England Journal of Medicine. <https://www.nejm.org/doi/10.1056/NEJMoa2001316>

Rakshit, B., & Basistha, D. (2020). Can India stay immune enough to combat COVID -19 pandemic? An economic query. *Journal of Public Affairs*. <https://doi.org/10.1002/pa.2157>

Ramping Up the Delivery of Cardiac Surgery During the COVID-19 Pandemic: A Guidance Statement From the Canadian Society of Cardiac Surgeons. (2020). Canadian Journal of Cardiology. [https://www.onlinecjc.ca/article/S0828-282X\(20\)30415-3/fulltext](https://www.onlinecjc.ca/article/S0828-282X(20)30415-3/fulltext)

Randau, T. M. (2020, September 8). A collateral effect of COVID-19 on orthopaedic and trauma surgery. *PLOS One*.

<https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0238759>

Reforming America's Healthcare System Through Choice and Competition. (2020).
<https://www.hhs.gov/sites/default/files/Reforming-Americas-Healthcare-System-Through-Choice-and-Competition.pdf>

Rising from the COVID 19 crisis: Policy responses in the long-term care sector. (2021). OECD.
<https://www.oecd.org/coronavirus/policy-responses/rising-from-the-covid-19-crisis-policy-responses-in-the-long-term-care-sector-34d9e049/>

Ruan, Q. (2020, April 6). *Clinical predictors of mortality due to COVID-19 are based on an analysis of data from 150 patients from Wuhan, China.* SpringerLink.
https://link.springer.com/article/10.1007/s00134-020-05991-x?error=cookies_not_supported&code=7cf3be8a-20df-452a-a7b3-2caf89698657

Staffing With Disease-Based Epidemiologic Indices May. . . : Anaesthesia & Analgesia. (2020). LWW.
https://journals.lww.com/anesthesia-analgesia/Fulltext/2020/07000/Staffing_With_Disease_Based_Epidemiologic_Indices.6.aspx

Successful Personalities in Anaesthesiology and Acute Care. . . : Anaesthesia & Analgesia. (2020). LWW
https://journals.lww.com/anesthesia-analgesia/Fulltext/2017/01000/Successful_Personalities_in_Anesthesiology_and.40.aspx

Suleiman, A. (2020). *Preparedness of Frontline Doctors in Jordan Healthcare Facilities to COVID-19 Outbreak.* MDPI. <https://www.mdpi.com/1660-4601/17/9/3181>

Sullivan-Marx, E. (2020). Ageing in America: How COVID-19 Will Change Care, Coverage, and Compassion. *Nursing Outlook*, 68(5), 533–535.
<https://doi.org/10.1016/j.outlook.2020.08.013>

Temporal dynamics in viral shedding and transmissibility of COVID-19. (2020). National Library Of Medicine. <https://pubmed.ncbi.nlm.nih.gov/32296168/>

The COVID-19 Pandemic: Effects on Low- and Middle-Income. . . : Anaesthesia & Analgesia. (2020). LWW.
https://journals.lww.com/anesthesia-analgesia/Fulltext/2020/07000/The_COVID_19_Pandemic_Effects_on_Low_and.13.aspx

The financial and employment effects of coronavirus disease 2019 on physicians in the United States. (2020). National Library Of Medicine. <https://pubmed.ncbi.nlm.nih.gov/32889069/>

Varghese, G., & John, R. (2020). COVID-19 in India: Moving from containment to mitigation. *Indian Journal of Medical Research*, 151(2), 136. https://doi.org/10.4103/ijmr.ijmr_860_20

Wu, Z., MD PhD. (2020, April 7). *Characteristics of and Important Lessons From the Coronavirus Disease 2019 (COVID-19) Outbreak in China*: Jama Network. <https://jamanetwork.com/journals/jama/fullarticle/2762130>