

The Economic and Healthcare Impacts of Price Gouging During the COVID-19 Pandemic: A Review of Medical Equipment and Staffing

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Abstract— The COVID-19 pandemic exposed significant vulnerabilities in healthcare systems worldwide, particularly related to price gouging of medical supplies and staffing. This review examines the economic and healthcare impacts of price gouging during the pandemic, focusing on the inflation of medical equipment prices and the rising cost of temporary healthcare staffing, such as travel nurses. Drawing on empirical evidence from various studies, the review highlights how inflated prices for ventilators, masks, and other essential items placed immense financial pressure on hospitals. It also shows how the surge in travel nurse wages exacerbated staffing shortages and increased operational costs for healthcare providers. In addition, the review identifies gaps in current price gouging laws, which were insufficient to regulate such widespread exploitation during a national crisis. The findings emphasize the need for stronger federal regulation to protect healthcare systems and ensure equitable access to resources in future public health emergencies. The review concludes that addressing price gouging in both medical equipment and labor markets is crucial to safeguarding healthcare infrastructure and mitigating disparities in healthcare access for vulnerable populations.

Keywords— COVID-19, healthcare, economic, medical equipment, management.

LITERATURE REVIEW

History & Background

Price gouging, defined as the practice of raising prices to exorbitant or excessive levels during times of crisis, poses significant risks to vulnerable populations. It is most prevalent when disasters, both natural and man-made, create surges in demand for essential goods, allowing opportunistic sellers to take advantage of the situation. In the state of Texas, price gouging is considered illegal under §17.46(b) of the Texas Deceptive Trade Practices-Consumer Protection Act, which prohibits businesses from inflating the prices of necessities, such as fuel, food, medicine, and building materials, following a disaster declaration by the governor or president (Attorney General of Texas, n.d.). Businesses found guilty of price gouging after such a declaration can face prosecution by the Texas Attorney General. Although businesses are generally allowed to set their own prices, the law draws a line when these prices rise to “exorbitant” or “excessive” levels during emergencies. These provisions help ensure that consumers are not unfairly exploited in times of disaster, when access to basic goods is critical for survival.

The rationale behind anti-price gouging laws is clear: in times of crisis, people depend on necessities more than ever, and exploiting this need by drastically raising prices can have life-threatening consequences. However, while the legality of price gouging is well-

defined in places like Texas, enforcement remains a challenge. Businesses often justify high prices as the result of supply chain disruptions or increased demand, creating a legal gray area. Nonetheless, the law exists to protect consumers from undue financial burdens and ensure that critical resources remain accessible.

Nowhere is the impact of price gouging more evident—or more dangerous—than in the medical equipment sector. During public health crises, such as the COVID-19 pandemic, the demand for items like gloves, masks, ventilators, and other medical supplies skyrocketed, leading to severe shortages. Opportunistic suppliers took advantage of these shortages by dramatically inflating prices, compounding the challenges faced by healthcare providers and government agencies trying to manage the crisis.

A ProPublica investigation in 2020 exposed how price gouging on essential medical supplies exacerbated the COVID-19 crisis, highlighting several egregious examples. In New York, one of the states hardest hit by the pandemic, gloves that normally cost less than five cents were being sold for 20 cents, a price increase of 300%. Similarly, masks that usually sold for 50 cents to a dollar were marked up to \$7.50, about 15 times their typical price. In more extreme cases, infusion pumps, typically priced at around \$1,300, were sold for \$2,795, and a portable X-ray machine, normally available for

\$30,000 to \$80,000, was sold for \$248,841 (Wellington, 2020). These price hikes forced states and hospitals into bidding wars, where they competed against each other to secure life-saving supplies, further driving up costs.

The consequences of such price gouging extend far beyond mere financial strain. Every mask or ventilator procured at an exorbitant price represents fewer resources available to save lives. Hospitals, already strained by surging patient numbers and limited funding, were pushed to their limits. To quantify, a study from the Center for American Progress finds that despite the fact that “billions of taxpayer dollars go into the creation and marketing”, profit margins of Big Pharma are anything but equitable for the people, leaving millions of Americans without basic treatments, especially insulin, whose prices have increased by 197 percent between 2002 and 2013, from \$4.34 per milliliter to \$12.92 per milliliter (Meller & Ahmed 19).

These institutions had to ration supplies, sometimes making difficult choices about who would receive critical equipment and who would not. The result was not just financial loss but also a direct threat to the health and well-being of the communities most affected by the pandemic (Wellington, 2020).

The strain on medical systems and government agencies became so severe that over 100 mayors and county executives across 17 states called on the federal government to use emergency powers under the Defense Production Act to ramp up production of medical supplies and impose greater control over their distribution (Wellington, 2020). They urged the Trump administration to appoint a “medical equipment czar” who would coordinate these efforts to ensure supplies were fairly allocated and price gouging was minimized. However, despite these calls for action, the federal response remained fragmented, leaving states and hospitals to fend for themselves in securing necessary equipment.

This situation underscores a critical lesson: price gouging, particularly in the context of medical supplies during a public health emergency, is not just an economic issue but a humanitarian one. The inflated prices did more than drain resources—they endangered lives by making it harder for health professionals to provide care. The lack of federal coordination in managing supply chains allowed unscrupulous businesses to exploit the system, driving up costs for essential equipment, and creating a fractured supply

process that pitted states and hospitals against each other (Garber, 2020).

In conclusion, price gouging during crises like the COVID-19 pandemic highlights the intersection between economic exploitation and public health. While laws such as those in Texas aim to curtail such practices, the complexity of supply chains and the unprecedented demand for medical supplies during the pandemic made enforcement difficult. The consequences of price gouging in the medical sector are particularly dire, as inflated prices for critical equipment can directly result in unnecessary loss of life. Strengthening federal oversight and improving coordination during crises are essential steps to preventing such exploitation in the future and ensuring that communities are protected during times of need.

Gap & Hypothesis

The background on price gouging, particularly during times of crisis such as the COVID-19 pandemic, highlights a critical issue: while price gouging is legally addressed in various states like Texas and has received significant media and political attention, there remains a gap in understanding the broader, systemic impacts of price gouging on healthcare systems and vulnerable communities. Furthermore, much of the discourse focuses on immediate, anecdotal evidence—such as the dramatic increase in prices for gloves, masks, and ventilators—but there is a lack of comprehensive research analyzing the long-term effects of price gouging on healthcare delivery, health outcomes, and equity in access to medical resources. This gap is critical, as understanding these systemic effects could inform better regulatory frameworks and crisis management strategies for future emergencies.

The most immediate research available centers on legal and economic responses to price gouging, such as the enforcement of laws and the short-term financial impacts on state governments and hospitals. However, what is missing is a more detailed exploration of how these inflated prices during crises affect public health infrastructure in both the short and long term. For example, while anecdotal evidence suggests that price gouging strained hospitals' ability to provide care during the COVID-19 pandemic, there is little research that quantifies how significant this strain was and how it differed across various types of healthcare institutions (e.g., public vs. private hospitals or rural vs. urban settings). Additionally, there has been limited analysis of the impact of price gouging on vulnerable

populations, including how these price surges may have exacerbated existing disparities in healthcare access and outcomes, particularly in marginalized communities.

Another underexplored area is the role of federal and state coordination in managing price gouging. While numerous calls were made for the U.S. government to use the Defense Production Act (DPA) to regulate the production and distribution of medical equipment during COVID-19, there is little examination of whether the DPA or similar mechanisms have been effective in preventing or mitigating the impacts of price gouging in practice. In fact, the fragmented and delayed federal response highlights the need for a comprehensive evaluation of how governments can better enforce price controls and ensure the equitable distribution of essential supplies during future emergencies.

Therefore, a potential hypothesis for further review could be: “Price gouging during public health emergencies exacerbates existing inequities in healthcare access and delivery, disproportionately affecting marginalized communities and straining healthcare infrastructure in low-income and rural areas.” This hypothesis can serve as a foundation for analyzing existing literature and identifying where research is lacking.

There are several specific questions that could be explored under this hypothesis:

- How does price gouging affect healthcare systems differently across various socio-economic and geographical contexts? For example, does price gouging have a more profound impact on rural hospitals, which may already be under-resourced, compared to urban hospitals? Are there differences in how private and public healthcare institutions can cope with price gouging, and how does this affect their patients?
- What are the long-term consequences of price gouging on public health outcomes? While the short-term impacts, such as delayed access to ventilators and masks, have been documented, it is unclear how these shortages have impacted long-term health outcomes, particularly for patients who were unable to receive timely care. Does price gouging during a crisis lead to measurable increases in mortality or morbidity in affected areas?
- How effective are existing laws and federal measures, such as the Defense Production Act, in curbing price gouging and ensuring equitable distribution of resources? This would involve

analyzing whether the legal frameworks currently in place are sufficient to prevent price gouging or if additional regulatory mechanisms are needed.

A systematic review of existing research addressing these questions could fill the gap in our understanding of the broader impacts of price gouging. By focusing on how price gouging during crises like the COVID-19 pandemic disproportionately affects certain healthcare institutions and populations, this review could offer insights that guide more effective policy and regulation. Additionally, it could identify where further empirical research is needed to develop a more comprehensive understanding of the issue.

While the legal and economic dimensions of price gouging have been addressed to some extent, the social and structural effects—especially on healthcare inequities and public health outcomes—remain underexplored. A hypothesis that focuses on the disproportionate impacts of price gouging on marginalized communities and healthcare infrastructure offers a valuable framework for reviewing the literature and identifying gaps where further research is needed.

METHODOLOGY

This review paper aims to synthesize existing research on price gouging, particularly in the context of medical equipment and staffing shortages during the COVID-19 pandemic, in order to identify gaps in current knowledge and propose potential solutions. The focus of the methodology is to systematically review literature and case studies that address the economic, legal, and healthcare impacts of price gouging on vulnerable communities and healthcare infrastructure. Using a combination of qualitative and quantitative analysis, this section outlines how the selected sources are synthesized and the research gaps identified.

Literature Selection and Inclusion Criteria

The first step in developing the methodology was to gather and analyze studies, reports, and investigations that focus on price gouging during the COVID-19 pandemic. The following criteria were used to include sources:

Studies addressing price gouging related to medical equipment, such as ventilators, masks, and gloves, with a specific focus on how these price increases affected hospitals and healthcare systems (Williams, 2022; Yang and Mason, 2022).

Articles examining the role of price gouging in healthcare staffing shortages, particularly through the lens of travel nurses, whose salaries were inflated during the pandemic due to unprecedented demand (Yang and Mason, 2022)(Williams, 2022).

Legal analyses and government reports on the regulatory framework and enforcement of price gouging laws, particularly those at the state level and their applicability to the healthcare industry (Texas Attorney General, 2020)(Williams 2022).

For this review, key databases such as PubMed, SSRN, and public health and legal publications were consulted. The literature includes journal articles, government publications, investigative journalism pieces, and legal case studies. Particular attention was given to sources that address the broader implications of price gouging on public health, healthcare equity, and the economic sustainability of healthcare institutions.

Research Methods and Case Study Approach

To explore the multifaceted issue of price gouging, this review employs both qualitative and quantitative approaches. The methodology integrates secondary data collection from studies that analyzed the impact of price gouging on medical supplies and healthcare personnel during the COVID-19 pandemic.

- **Case Studies and Data Synthesis:** The review focused on specific case studies that highlighted the extreme price inflation of essential medical supplies and personnel during the COVID-19 pandemic. One major source of data was the "Price Gouging in a Pandemic" study, which provided concrete examples of inflated costs and their consequences on healthcare delivery systems. This study documented how ventilators, masks, and other critical supplies were marked up to exorbitant levels in hard-hit areas like New York and California (Williams, 2022). In addition, the ProPublica investigation cited in "Price Gouging in a Pandemic" revealed detailed cases of how hospitals paid inflated prices for PPE, including 15-fold price hikes for masks and a \$248,000 charge for a portable X-ray machine, typically priced at \$30,000 (Williams, 2022). These case studies were evaluated to examine the financial strain on healthcare providers, using quantitative data on price increases to understand the economic burden.

- **Comparative Analysis of Staffing and Medical Supply Price Gouging:** This review also incorporates a comparative analysis of two distinct types of price gouging: that affecting medical equipment and that involving healthcare staffing shortages. As highlighted by Yang and Mason (2022), the rise of travel nursing was a direct result of the pandemic-induced shortage of healthcare workers, with wages rising to as high as \$10,000 per week for travel nurses. This was compared with data on price spikes in ventilators and other critical medical supplies, as noted in the "Price Gouging in a Pandemic" report. Both instances of price gouging were analyzed to assess their relative impact on healthcare infrastructure, including staffing shortages that left hospitals unable to maintain full capacity (Yang and Mason, 2022). This comparative approach was critical in identifying how different sectors of the healthcare system were affected by price gouging, with a particular focus on how healthcare delivery was compromised in areas where travel nurse salaries outstripped hospitals' budgets.

- **Legal and Policy Analysis:** The methodology also includes a legal review of price gouging statutes at both state and federal levels, as referenced in the Texas Attorney General's guidelines (2020) on prosecuting price gouging in times of disaster. The study "Price Gouging in a Pandemic" emphasizes how these laws, while well-intentioned, were often insufficient to address the nuances of modern-day price manipulation, particularly in digital markets and staffing agencies. This legal analysis examines the gaps in enforcement and the challenges posed by variations in state-level regulations. For example, laws in states like Texas allow for prosecution of price gouging under the Texas Deceptive Trade Practices-Consumer Protection Act, but enforcement is limited when price gouging occurs across state lines or via online retailers (Texas Attorney General, 2020). Similarly, Yang and Mason (2022) discuss how no federal law currently prohibits price gouging specifically related to staffing agencies, leaving hospitals vulnerable to inflated wages for temporary staff during emergencies.

Data Analysis and Thematic Synthesis

The research analysis in this review applied thematic synthesis to identify key trends and patterns in the data:

- Economic Impact on Healthcare Providers:** Quantitative data was extracted from the "Price Gouging in a Pandemic" report, which included examples of inflated prices for medical equipment and analyzed how these costs contributed to financial strain on healthcare providers. Thematic analysis highlighted that price gouging not only drained hospitals of financial resources but also led to significant delays in patient care, particularly in low-income and rural areas.
- Disparities in Healthcare Access:** Both qualitative and quantitative data from the studies were used to assess how price gouging disproportionately affected vulnerable populations. For example, "Price Gouging in a Pandemic" and Yang and Mason (2022) both noted that rural hospitals and low-income communities were more severely impacted by inflated prices for medical supplies and travel nurses. This synthesis enabled the identification of healthcare disparities exacerbated by price inflation during crises.
- Staffing Crisis and Price Gouging:** The focus on travel nurses, as highlighted by Yang and Mason (2022), provided a unique perspective on how staffing shortages during the pandemic led to price inflation in human resources. The methodology includes an analysis of how travel nurses, earning up to quadruple the salaries of regular staff, caused operational disruptions within healthcare facilities (Yang and Mason, 2022). The qualitative data from this study were juxtaposed with quantitative findings from "Price Gouging in a Pandemic" to understand the broader economic impacts on the healthcare system.

Evaluation of Research Validity and Ethical Considerations

To ensure the reliability and validity of this review, sources were evaluated based on their methodological rigor, relevance to the topic, and contribution to understanding price gouging in healthcare during emergencies. Studies that provided empirical data and clear case studies were prioritized. The review also adheres to ethical standards by properly citing all sources, ensuring transparency, and focusing on the

public health implications of price gouging rather than personal or institutional blame.

Limitations: While the methodology provides a comprehensive analysis of price gouging during the COVID-19 pandemic, it is limited by the availability of real-time data and the evolving nature of the pandemic. Many studies are still emerging, and future research may provide more detailed insights into the long-term impacts of price gouging on public health.

RESULTS

This section presents a synthesis of findings from the literature regarding price gouging during the COVID-19 pandemic, particularly in relation to medical equipment and staffing. The results are based on empirical evidence from the provided studies and highlight the economic burden on hospitals, disparities in healthcare access, and the in-efficacies of current legal frameworks in addressing price gouging. Three figures are also included to visualize key findings.

1. Economic Burden of Price Gouging on Hospitals

Medical Equipment Inflation: The COVID-19 pandemic triggered significant price spikes for essential medical equipment such as ventilators, masks, gloves, and X-ray machines. According to the ProPublica investigation highlighted in the "Price Gouging in a Pandemic" report, the price of ventilators rose from \$30,000–\$80,000 to as high as \$248,841 during peak demand (Williams, 2022). Similarly, masks that usually sold for under a dollar surged to \$7.50 each, representing a 15-fold increase. The dramatic inflation of such equipment placed a heavy financial burden on healthcare providers, especially smaller hospitals that already struggled with limited budgets.

Moreover, hospitals reported exhausting reserves and diverting funds meant for technological upgrades, infrastructure maintenance, and other essential services to cope with inflated equipment costs (American Hospital Association, 2024). According to a 2024 report by the American Hospital Association (AHA), operational costs continued to rise due to sustained inflation in the medical supply chain, with hospital drug expenses increasing to \$115 billion in 2023 alone (American Hospital Association).

Table 1: Price Surge in Medical Equipment During the COVID-19 Pandemic

Equipment Type	Pre-COVID Price (Range)	Pandemic Price (Range)	% Increase
Ventilators	\$30,000 - \$80,000	\$248,841	Up to 228%
Masks	<\$1	\$7.50	750%

Gloves	\$0.05	\$0.20	300%
Infusion Pumps	\$1,300	\$2,795	115%
Portable X-ray Machines	\$30,000 - \$80,000	\$248,841	228%

(Sources: Williams, 2022; Grennan, 2013; American Hospital Association 2024)

2. Impact on Staffing and Labor Costs

Travel Nurse Price Gouging: Staffing shortages, particularly in nursing, were a severe issue during the pandemic. Travel nurses, hired to fill gaps in overwhelmed hospitals, commanded wages between \$5,000 and \$10,000 per week, up from an average of \$1,400 per week pre-pandemic (Yang & Mason 2022) (Williams 2022). This massive surge in labor costs forced hospitals to divert substantial resources from other essential services. Many healthcare facilities, especially in rural areas, could not afford these inflated

wages, which worsened staff shortages and compromised patient care. The increased reliance on travel nurses also led to widespread dissatisfaction among permanent staff, many of whom were earning significantly less despite working alongside travel nurses. This contributed to burnout, further exacerbating the staffing crisis. The report from the AHA showed that between 2021 and 2023, hospitals spent an additional \$42.5 billion on labor costs, much of it going toward contract labor, including travel nurses (American Hospitals Association).

Table 2: Rise in Travel Nurse Salaries During COVID-19

Category	Pre-Pandemic Salary (Average Weekly)	Pandemic Salary (Average Weekly)	% Increase
Staff Nurses	\$1,400	\$1,400	0%
Travel Nurses	\$1,400	\$5,000 - \$10,000	Up to 614%

(Sources: Yang & Mason, 2022; Williams, 2022)

3. Disparities in Healthcare Access

Rural Hospitals Hit Harder: Price gouging disproportionately impacted rural hospitals and facilities in low-income areas. According to Grennan's (2013) study on medical devices, hospitals in less affluent regions faced steeper price increases due to limited bargaining power and market isolation (American Hospital Association). This meant that rural hospitals, which were already financially constrained, had to pay more for medical equipment, further exacerbating disparities in healthcare access.

Furthermore, the AHA's report from 2024 noted that many rural hospitals were forced to close due to insurmountable financial pressure. These closures left entire communities without access to critical healthcare services. Price gouging in medical supplies and labor compounded the financial challenges for these hospitals, driving some into bankruptcy (American Hospital Association). The cumulative effects of these factors widened the healthcare gap, particularly for elderly and underserved populations who were more reliant on hospital care.

Table 3: Hospital Closures and Financial Distress in Rural Areas (2020-2023)

Year	Number of Rural Hospital Closures	Increase in Contract Labor Costs (%)
2020	20	35%
2021	28	50%
2022	34	75%
2023	40	85%

(Source: American Hospital Association, 2024)

4. Legal and Regulatory Shortcomings

Inadequacies in Price Gouging Laws: Despite existing price gouging regulations, enforcement during the COVID-19 pandemic was inconsistent and often ineffective. As outlined in Grennan's study (2013), pricing in medical device markets is notoriously opaque, making it difficult for regulators to determine fair market prices during emergencies (American Hospital

Association). Moreover, state-level price gouging laws were not designed to handle a nationwide public health crisis like COVID-19. States such as Texas, which had laws in place to combat price gouging, struggled to enforce them in cross-state digital markets where inflated prices for medical equipment were rampant.

The fragmented legal framework allowed suppliers and staffing agencies to exploit loopholes and charge exorbitant prices for essential goods and services. Calls for federal intervention, such as the implementation of the Defense Production Act, were delayed, resulting in prolonged periods where hospitals were forced to pay inflated prices for basic necessities (Williams 2022) (American Hospital Association).

CONCLUSION

The COVID-19 pandemic exposed significant vulnerabilities in the U.S. healthcare system, particularly in its ability to regulate and prevent price gouging during emergencies. The results show that price gouging not only placed an immense financial burden on hospitals but also exacerbated existing disparities in healthcare access, especially for rural and low-income populations. Furthermore, the pandemic highlighted the shortcomings of current price gouging laws and their enforcement, necessitating a reevaluation of regulatory frameworks to protect healthcare providers and ensure equitable access to medical supplies and services in future crises.

This review emphasizes the need for a coordinated federal response, including more stringent oversight of medical supply chains and labor markets, as well as enhanced legal mechanisms to prevent price gouging during emergencies. By addressing these issues, policymakers can help mitigate the severe financial and health impacts experienced by hospitals and vulnerable populations during times of crisis.

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