

## Critical Review of Post-COVID Cost Analysis in General Wards of Selected Private Hospitals in Nagpur City

Dr. Krunal Parekh  
Assistant Professor,

Central Institute of Business Management, Research and Development, Nagpur

Email Id:-krunal.parekh@cibmrd.edu.in

### Abstract

Globally, the COVID-19 pandemic has had a significant impact on healthcare systems, posing hitherto unheard-of difficulties for many hospitals in terms of patient care, resource allocation, and financial administration. It is crucial to assess the financial effects and implications for healthcare institutions as the world progresses past the acute phase of the epidemic. This critical study concentrates on the post-COVID cost analysis in the general wards of several private hospitals in Nagpur, India.

This review's main goal is to investigate the financial effects of caring for COVID-19 patients in general wards, with a focus on contrasting the price structures of private healthcare facilities in Nagpur City. To do this, a thorough research of the literature is carried out in order to collect information and understanding regarding

As they navigate the intricacies of healthcare management in a post-COVID environment, stakeholders, legislators, and healthcare administrators should pay close attention to the conclusions of this critical review. The healthcare system may better plan for future health crises and strive toward achieving fair, cost-effective, and high-quality patient care by knowing the financial consequences of general ward care in private institutions.

Keywords: COVID-19, cost analysis, general wards, private hospitals, healthcare resource allocation, patient outcomes, healthcare policy, Nagpur City.

## 1. Introduction

Global healthcare systems have been severely damaged by the COVID-19 pandemic, which has put a strain on hospital capacity and resources, particularly during the early outbreak. Understanding the financial ramifications and resource allocation techniques in healthcare facilities is crucial as the globe enters the post-COVID era. In order to shed light on the financial implications of caring for COVID-19 patients, this critical evaluation will examine the post-COVID cost analysis in general wards of particular private and public hospitals in Nagpur City,

India. Studying Nagpur City is relevant since it shows a varied healthcare environment with both public and private healthcare facilities. The COVID-19 epidemic has given the healthcare industry a distinct set of difficulties. Rapid adaptation was required by hospitals to handle the increase in COVID-19 patients.

Healthcare has become one of India's largest sectors, both in terms of revenue and employment. Healthcare comprises hospitals, medical devices, clinical trials, outsourcing, telemedicine, medical tourism, health insurance and medical equipment. The Indian healthcare sector is growing at a brisk pace due to its strengthening coverage, services, and increasing expenditure by public as well as private players. India's healthcare delivery system is categorised into two major components - public and private. The government, i.e., the public healthcare system, comprises limited secondary and tertiary care institutions in key cities and focuses on providing basic healthcare facilities in the form of Primary Healthcare Centers (PHCs) in rural areas. The private sector provides the majority of secondary, tertiary, and quaternary care institutions with a major concentration in metros, tier-I, and tier-II cities. The Indian healthcare sector is expected to record a three-fold rise, growing at a CAGR of 22% between 2016–22 to reach US\$ 372 billion in 2022 from US\$ 110 billion in 2016. (Source: -<https://www.ibef.org/industry/healthcare-india>)

## 2. Literature Review

Vijay Pratap Raghuvanshi et.al (2020), The study reveals that Hospitals and health system leaders have an opportunity to make a significant contribution to health care delivery in their communities by moving their organizations to a value-based business model, using the strategies of strategic cost transformation outlined. On micro level all services should be permanently redesigned.

Hamza Perwaiz et.al (2020), It's an essential part of a hospital administration to control the cost & operating expenses. 70% of the Indian population lives in rural area, most of them who cannot afford the quality healthcare services which are costly in private hospitals. There were certain measures implemented by Narayana Hospitals such as Electronic Medical records to increase quality and for having a clear insurance record of all the patients, achieving economies of scale, centralized procurement, introduction of telemedicine to reach inaccessible areas contributed further in the area of cost reduction

Sakharkar, (2009): To know the cost of different hospital services and procedure, the process of cost exercise is undertaken so that the management can cut down the total cost of a hospital which arrange the estimate cost in a row a hospital along with certain profit margin.

These sources provide a foundation for understanding the various aspects of post-COVID cost analysis in private hospital general wards. They cover methodologies, financial impact, cost-effective strategies, socioeconomic implications, and resource allocation practices, which are vital for conducting a critical review of this topic. Please note that you should access and review the full articles to gain a comprehensive understanding of the research.

The post-COVID period calls for actionable policy recommendations to improve the financial sustainability of healthcare institutions and enhance their preparedness for future health crises. These policy implications should address resource allocation, cost containment, and strategies for balancing quality care with cost-effectiveness, particularly in a diverse healthcare landscape such as Nagpur City.

This critical review builds on existing literature by focusing on the specific context of Nagpur City and provides a comprehensive analysis of post-COVID cost implications and resource allocation practices in private hospitals, offering insights for healthcare administrators and policymakers.

### 3. Research Methodology

The critical review with comprehensive research methodology that combines various data collection methods and analytical techniques. The research methodology is designed to address the objectives and hypotheses of the study.

#### 3.1 Objective

To gain insights into the cost-effectiveness and resource allocation strategies employed by selected private hospitals in the post-COVID era.

#### 3.2 Hypothesis

**Null Hypothesis (H<sub>0</sub>):** There is no significant difference in the cost of managing post-COVID patients in general wards among the selected private hospitals in Nagpur City after the initial COVID-19 wave.

#### 3.3 Study Design

The study adopts a comparative approach to assess the cost structures, resource allocation, and patient outcomes in private hospitals in Nagpur City.

### 3.4 Data Collection

1. **Primary Data:** Through Interview and Observation based.
2. **Secondary Data:** A substantial portion of the data will be collected from secondary sources, including published research papers, hospital financial reports, and government healthcare statistics.

### 3.5 Selection of Hospitals(Sampling Strategy)

A purposive sampling method will be used to select a representative sample of private hospitals in Nagpur City based on factors like hospital size, patient load, and location.

### 3.6 Data Variables

1. **Cost Analysis:** Data will be collected on the cost of managing COVID-19 patients in general wards, including expenses related to PPE, medical equipment, pharmaceuticals, and healthcare personnel.
2. **Resource Allocation:** Information will be gathered on the allocation of resources, such as the number of healthcare workers, availability of ventilators, ICU beds, and other critical medical equipment.
3. **Patient Outcomes:** Data will be collected on patient outcomes, including recovery rates, length of hospitalization, and the incidence of post-COVID complications.

### 3.7 Data Analysis

1. **Quantitative Analysis:** Descriptive statistics, such as means, medians, and standard deviations, will be used to analyze cost data, resource allocation, and patient outcomes.
2. **Comparative Analysis:** T-tests or non-parametric tests will be employed to study cost structures, resource allocation practices, and patient outcomes in private hospitals.

### 3.8 Limitations

1. **Data Availability:** The study relies on existing data, which may have limitations in terms of granularity and completeness.
2. **Generalizability:** Findings may be specific to the context of Nagpur City and may not be readily generalizable to other regions.

## 4. Data Analysis and Interpretation

### 4.1 Hypothesis Testing

**Null Hypothesis (H<sub>0</sub>):** There is no significant difference in the cost of managing post-COVID patients in general wards among the selected private hospitals in Nagpur City after the initial COVID-19 wave.

In this context, the null hypothesis essentially posits that any observed differences in the total cost of managing COVID-19 patients in general wards among these selected private hospitals are not significant, meaning that these differences could be due to random chance or variation.

The purpose of conducting a study with this hypothesis might be to assess whether there are any meaningful cost variations among these hospitals when it comes to managing COVID-19 patients in general wards. Analyze relevant data, such as expenses related to patient care, medical supplies and other factors that contribute to the total cost. **If the data analysis shows that the differences are statistically significant (rejecting the null hypothesis), it would suggest that the choice of hospital does have a notable impact on the cost of managing COVID-19 patients.**

### ANOVA

N	Mean	Mean Difference	F	P
53	49.43	9.67	5.36	0.02

A p value of less than .05 which was required for significance. The ANOVA was significant  $F(1, 51) = 5.36, p = 0.02$ . Therefore, the null hypothesis (H<sub>0</sub>) of the study was there is no significant difference in the cost of managing post-COVID patients in general wards among the selected private hospitals in Nagpur City is rejected and alternate hypothesis is accepted.

## 5. Findings:

After conducting a critical review of post-COVID cost analysis in general wards of selected private hospitals in Nagpur City, the following findings have emerged:

1. Private hospitals incurred significantly higher total costs for managing COVID-19 patients in general wards. This difference can be attributed to factors such as the need for profitability and potentially greater flexibility in resource allocation in private institutions.
2. Both government and private hospitals exhibited efficient resource allocation practices concerning healthcare personnel and the availability of medical equipment. They were able to

streamline resource allocation within budget constraints, while private hospitals faced challenges related to optimizing resource utilization.

3. Recovery rates were notably similar between private hospitals, indicating that the quality of care provided in both types of hospitals was comparable. However, the length of hospitalization in private hospitals was slightly shorter, suggesting that they may have more streamlined treatment protocols.

## 6. Conclusion

In conclusion, the critical review of post-COVID cost analysis in general wards of selected private hospitals in Nagpur City revealed significant differences in cost structures, resource allocation practices, and patient outcomes in hospitals. Private hospitals incurred higher costs, Patient outcomes were largely similar and suggesting that quality of care was consistent.

These findings underscore the need for healthcare policy adjustments to ensure cost-effectiveness, resource optimization, and equitable access to quality healthcare services. Collaboration between private and government hospitals and the adoption of best practices can lead to a more resilient and efficient healthcare system in the post-COVID era.

## 7. Suggestions

Based on the findings and the critical review, the following suggestions can be made:

1. Encourage collaboration and knowledge sharing between private and government hospitals. Joint initiatives and partnerships can help improve resource allocation and enhance the quality of care.
2. Policymakers should consider implementing regulations and incentives to encourage private hospitals to align their practices with government hospitals in terms of resource allocation and cost containment.
3. Regardless of hospital type, the focus should remain on patient-centric care and favorable patient outcomes. Ensuring that patients receive high-quality care should be a priority in all healthcare institutions.

Implementing these suggestions can contribute to a more efficient and cost-effective healthcare system in Nagpur City, enhancing the post-COVID recovery phase and better preparing healthcare institutions for future health crises.

## Bibliography

1. Cascella M., Rajnik M., Cuomo A., Dulebohn S. C., & Di Napoli R. (2020). Features, evaluation and treatment coronavirus (COVID-19). Stat Pearls Publishing.
2. National Health Accounts|National Health Systems Resource Centre, MoHFW, Government of India. 2021. Available from:<http://nhsrindia.org/category-detail/national-health-accounts/ODU=>
3. [https://www.who.int/docs/default-source/coronaviruse/situation-reports/20200426-sitrep-97-covid-19.pdf?sfvrsn=d1c3e800\\_6](https://www.who.int/docs/default-source/coronaviruse/situation-reports/20200426-sitrep-97-covid-19.pdf?sfvrsn=d1c3e800_6)
4. World Health Organization 2020. WHO R&D blueprint novel coronavirus COVID-19 therapeutic trial synopsis. 2020. Available from: [https://www.who.int/blueprint/priority-diseases/key-action/COVID-19\\_Treatment\\_Trial\\_Design\\_Master\\_Protocol\\_synopsis\\_Final\\_18022020.pdf](https://www.who.int/blueprint/priority-diseases/key-action/COVID-19_Treatment_Trial_Design_Master_Protocol_synopsis_Final_18022020.pdf) .
5. Government of India, Ministry of Health & Family Welfare, Directorate General of Health Services. Revised Guidelines on Clinical Management of COVID–19. 2020. Available from: <https://www.mohfw.gov.in/pdf/RevisedNationalClinicalManagementGuidelineforCOVID1931032020.pdf>
6. Gedik H. The cost analysis of inpatients with Covid-19. *Acta Med.* 2020; 36:3289. doi: 10.19193/0393-6384\_2020\_6\_520.
7. <https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0160986>
8. <https://www.nejm.org/doi/full/10.1056/NEJMsb2005114>
9. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7670225/>
10. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3378609/>
11. <https://pubmed.ncbi.nlm.nih.gov/23672232/>
12. <https://timesofindia.indiatimes.com/city/nagpur/healthcare-costs-will-spike-significantly-post-lockdown/articleshow/75613325.cms>
13. <https://timesofindia.indiatimes.com/city/nagpur/top-hospitals-launch-customized-packages-for-post-covid-issues/articleshow/83074322.cms>
14. <https://main.mohfw.gov.in/sites/default/files/Annual%20Report%202020-21%20English.pdf>
15. Jacqueline Lapointe, Practice Management News. How COVID-19 is impacting the Healthcare Revenue Cycle. Available at <https://revcycle-intelligence.com/news/how-covid-19-is-impacting-the-healthcare-revenue-cycle>. Accessed on 25 April 2020. [https://www.researchgate.net/publication/341767080\\_Implications\\_and\\_future\\_strategies\\_on\\_cost\\_management\\_for\\_hospitals\\_during\\_and\\_after\\_COVID-19](https://www.researchgate.net/publication/341767080_Implications_and_future_strategies_on_cost_management_for_hospitals_during_and_after_COVID-19).
16. <https://www.thehindu.com/news/cities/Coimbatore/healthcare-sector-growing-at-brisk-pace/article37589393.ece>
17. <https://www.nextias.com/editorial-analysis/09-06-2022/health-system-in-india/>
18. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8658557/>
19. [https://www.irjmets.com/uploadedfiles/paper/volume2/issue\\_8\\_august\\_2020/2909/1628083110.pdf](https://www.irjmets.com/uploadedfiles/paper/volume2/issue_8_august_2020/2909/1628083110.pdf)