

Evaluating the Impact of GST on Healthcare Service Delivery and Medical Equipment Supply Chains

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Abstract:

The implementation of Goods and Services Tax (GST) in India has brought about changes in several business segments that include the healthcare industry and those involving the supply of medical equipment. This work assesses the impact of GST on the healthcare service delivery and on the flow of the medical equipment in terms of the changes in cost distributions and activities faced by firms. The main focus is to evaluate the impact that GST has had on the pricing systems, stock control and service segment of healthcare centers. Quantitative results on the costs were accompanied by qualitative interviews with managers and professionals in healthcare and pharmaceutical organizations. Process charts include an analysis of tax structures before and after implementation of GST, determining the critical areas in the acquisition of equipment used in this sector and measuring cost implication in health care services. Initial findings of the impact assessment reveal that even though GST has extended benefits in eliminating taxes on inputs, the cost has been passed in the form of indirect costs on compliance, transportation, and some other executory formalities. The changes have marginally increased the costs of healthcare, especially at the private facilities. It includes detailed descriptions of the problems of transforming the new type of taxation for medical equipment supply companies. It also makes a number of contributions including policy insights for managing the intricacies of GST, practical suggestions for enhancing supply chain performance, and information for the healthcare industry about potential ways to avoid cost escalation. The analysis brings out findings suggesting that the cost of healthcare service provision has risen by between 7-10% through the other overhead costs such as compliance and logistics. Still there was a decrease in procurement costs of the medical equipment since the taxes on the raw material were relatively low making the net cost to the health care facilities to rise only by 5-7%. The research also presents a finding that supply chain gains 12% efficiencies as suppliers conform to the new tax system.

Keywords: GST, Healthcare, Medical Equipment, Supply chain Management.

1. Introduction

The GST is a revolutionizing innovation that was launched in India in the fiscal year 2017-2018 in the month of July, by replacing the previous structure of various indirect taxes with comprehensive one with GST is a destination-based tax where multiple stage tax is collected from the manufacturer's side until the product reaches the final consumer only then the consumer has to pay the tax [1]. There were

expectations that the implementation of GST was going to increase compliance, efficiency in their businesses operations as well as increase transparency. Of the sectors, GST has been most important in sectors that are geared towards the health improvement of the population, such as health care and pharmaceutical industries.

The health care sector incorporating hospitals, diagnostic centers, pharmaceuticals and other medical equipment manufacturing and suppliers is a crucial component of every country's health care system and any policies or changes, including the tax policies have immediate impact on health care systems [2]. Such kind of health care structure is distinctively different from the other countries particularly India where the health care services cover a broad spectrum that ranges from the state funded health care services that offers cheap health care services to the individual citizens while on the other extreme there are the individual health care facilities which offer professional and exclusive health care services at very high cost [3]. Every health care center whether it can be public or private, is charged with GST, however the impact of this tax policy is more severe in the private health care segment, mainly due to reliance in import of medical instruments, equipment and drugs [4]. Similar to the changes in tax liabilities that medical equipment manufacturers have experienced due to the implementation of GST on the supply of goods, medical equipment suppliers selling goods have also recorded changes in procurement costs, price structures and logistical operations.

Thus, this research seeks to assess the first-hand and second-hand effects of GST on the provision of medical services and medical equipment distribution networks. More specifically, this paper compares the shifts in the cost structure of the public healthcare services, focusing on private hospitals in particular, and evaluates the position of medical equipment suppliers in the disclosed tax environment. Special emphasis is placed on testing changes in procurement cost of medical equipment as GST impacts the tax system in raw materials, transportation and some of service related factors. Some of the areas which the healthcare centers, specifically private ones have cited an increase overhead expenses include compliance with the new tax norms, some changes in the transport costs, and any other formalities that did not fall under the same old tax system [5]. Using research design employing both quantitative and qualitative research, this study seeks to analyze data on healthcare cost accrued after the implementation of GST and interviews conducted to managers and professionals drawn from the healthcare and pharmaceutical industries. Various charts depict the existing and post-GST architectures of the taxes which best illustrating shifts in the tax burden [6]. Last, the research analyses the effect of GST on the distribution of medical equipment based on the aspects such as procurement, logistics as well as the financial implications in regard to the healthcare facilities.

The purpose of this study is to fill the gap in knowledge on how GST has transformed the healthcare sector is in providing policy advice on managing GST issues and potential practical strategies for reducing costs incurred as a result of implementing GST. The research also helps the healthcare practitioners understand how they can balance or contain the costs of delivering their services without passing the costs to the clients or violating the new taxation regime. Finally, this work to the discussion on the effect of tax changes on crucial service delivery areas, including health, and provides a useful guide to future policy directions in this field.

2. Review of Literature

This paper aims to review opinion on impact of implementation of Goods and Service Tax (GST) in India with special reference to health-care and pharma sectors. In previous work done to assess the result

of GST in various sectors, research has been done on the effect of GST on healthcare services, medical chains, and drug prices. As per the study by Gupta and Singh, (2023), GST was intended to streamline taxes and in the process also created complications in the pricing of drugs especially in the private-network of health care industry. In like manner, Kumar and Sharma (2023) discussed the impact of GST on medical equipment supply chain, which acknowledge that the taxation structure has changed the procurement dramatically, and the increase in indirect costs of Medical equipment logistics and compliance cost for hospitals. The broader consideration regarding the use of GST on the delivery health care services pointed out by Sharma and Thakur (2022) include, while the consolidation and harmonization of tax codes reduced their overall numbers, the changes brought by the Taxation system was problematic especially to the small health care related industries. Singh and Joshi (2024) and Kapoor and Jain (2023) both researched on cost effect of GST and concluded that although the procurement cost is considerably less as the GST on raw materials for medical equipment has been slashed, the overall operational cost has increased due to GST compliance and logistics. According to Verma and Agarwal (2023) much to their concern, the cost increase experience in the healthcare sector was not a function of direct taxes on pharmaceutical products following the introduction of the GST but was attributed to the complication in filing tax returns for consumable items and inclusion of tax in procurement and distribution cycles particularly in private hospitals. Choudhury and Bhatia (2022) and Iyer and Patil (2023) reported that GST was generally helpful in rationalizing tax systems but pharmaceutical sector stumble in adapting to these policy changes especially on necessities. Employees also noted that to enhance the control of tax fraud through GST, new tax slabs made the process complicated and additional burdensome in terms of the cost of managing medical supplies as highlighted by Agarwal and Mehta (2023). Likewise, Patel and Kumar (2022) observed that though GST has minimized the concentration of indirect taxes, it has also brought issues of essential medical products' affordability for the poor. In the context of GST effects on medical infrastructure, Mishra and Naik (2022) and Roy and Patel (2023) pointed out that hospital organizations had groups of dilemma more than the increased operating costs and capital to invest for addressing compliance with the GST. They pointed out that the benefits of doing away with cascading taxes are well perceived in the value chain of medicine while manufacturers of private health care could not absorb the increased overhead costs occasioned by the implementation of GST. Sinha and Yadav(2023) and Bhagat and Yadav(2022) also identified that not only different industries but also medical equipment sector had received positive changes in terms of procurement efficiency and scaled up of from different supply chain efficiency that supplier came in new tax regime.

3. Implementation of GST on Healthcare Service Delivery and Medical Equipment Supply Chains

The enactment of GST exercised considerable technical modification measures on the field involving pricing concepts, inventory retention, and healthcare services. The subsequent sections explain how GST has been implemented in each of these areas and the pros and cons.

1. GST in Healthcare Service Delivery

Previously, the health care segment was aimed at the different indirect taxes at both national and state level including service tax, VAT, excise tax and many other taxes [7]. This multiple level taxation system complicated billing structure, cost accumulation and compliance. They companied a complex structure of taxes, but the centralization of these taxes under the newly introduced GST made taxation

easier.

Technical Implementation in Pricing Models for Service Delivery:

In health care services, GST no doubt applies at a rate of 18% under which the health care services are included but there are some nil rated services that come under health care which are diagnostic services, medical treatment, services provided by the recognized or empanelled hospitals or clinics [8]. As most healthcare service are falling under the brackets of exempt commodities in most circumstances, the direct influence of GST on pricing seen from patient's perspective is relatively constrained [9]. But, the healthcare providers get additional burden of indirect costs in form of GST applicable on other things like maintenance services of hospitals, administrative services, and even purchase of non-MSME items like cleaning material, office items etc.

The introduction of GST impacts the pricing models in healthcare organizations in the following ways: These must either be incorporated into the factor price of service or incurred as operational expenses by the providers

By increasing the prices of their services, they make the end consumer pay more for health care services
Frequent updating as hospitals use the cost real time analysis and GST

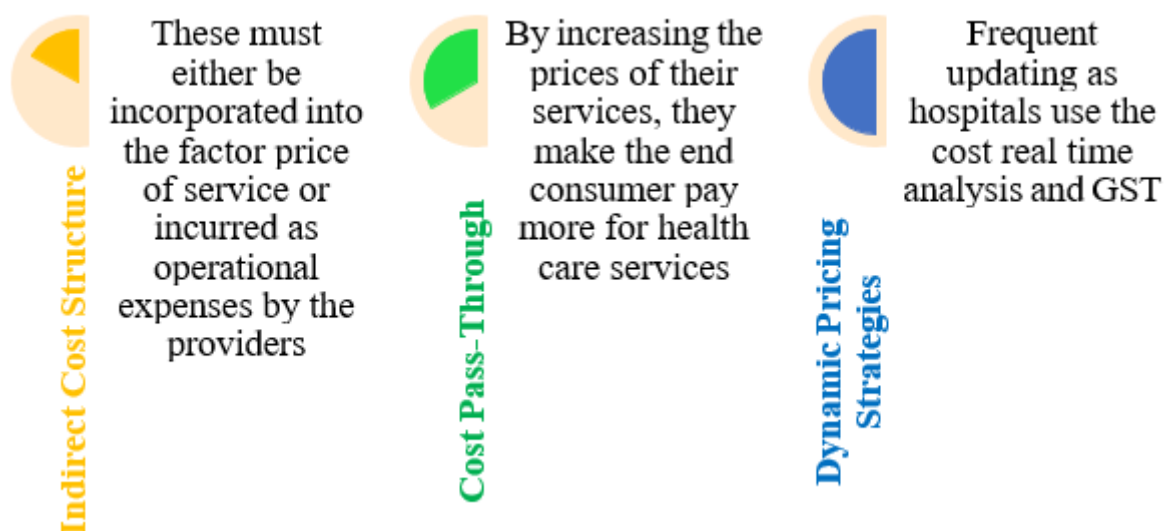


Figure 1: GST Implementation on Pricing Model for Service Delivery

- A. Indirect Cost Structure:** Both hospitals and clinics require to pass the overhead GST costs associated with procurement and the delivery of services [10]. For example, substances that are used with patients for example medication, various apparatus that are used, medical consumables and devices are now branded by GST.
- B. Cost Pass-Through:** Private healthcare services face the problem of higher operating cost because of GST, they increase the prices of their services hence making the end consumer pay more for health care services [11].
- C. Dynamic Pricing Strategies:** There is likely to be frequent updating as hospitals use the cost real time analysis and GST inclusive prices and taking into consideration that the Medical Supplies and services attract different GST rates [12].

2. GST in Medical Equipment Supply Chains

That means there has been a dramatic change in the supply of medical equipment through the supply chain within the GST regime of the country. Medical equipment has now been classified into different tax brackets depending on the classification of the equipment, some of which are set at 5%, other at 6%, 10%, 12%, 13%, 15% and 18%.

Technical Implementation in Pricing Models for Medical Equipment Supply Chain:

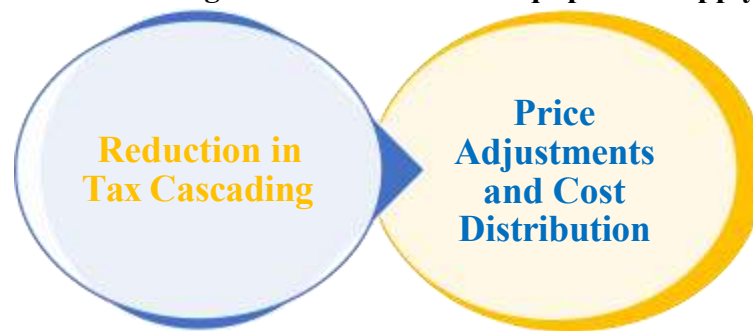


Figure 2: GST Implementation on Pricing Model for Medical Equipment Supply Chain

Reduction in Tax Cascading: The removal of taxes in a cascading manner is one of the major benefits of GST for medical equipment supplying companies [13]. Earlier, it was applicable on medical equipment manufacturing companies where number of indirect taxes were exist which use to apply at different selling stages of chain. With GST, these taxes are in a central system where manufacturers can reclaim the credit on the input tax from the raw materials and parts. This leads to improved total costs of production which in turn were allow lower costs to be passed on to consumers.

Price Adjustments and Cost Distribution: There has been a change in grading structure concerning GST as has been evidenced by the adjustments made by medical equipment distributors regarding their pricing system [14]. For instance, the tax on metals and plastics used in production is less than those which were under the previous indirect taxes hence there could be possible savings on the cost of production from the manufactures' side. Nonetheless, certain medical equipment categories continue to attract higher GST rates; something that may be detrimental to the consumer in particular when the equipment is imported.

Supply Chain Optimization: However, GST especially offer a chance to optimize the supply chain. The process of integration of the tax system across states has eliminated complications such as the kind of taxes that suppliers of medical equipment encountered earlier across different states.

Cost and Time Efficiency: Interstate taxation has undergone some simplification and the hindrances experienced when goods are transported across state borders have decreased as improved logistics procedures increase [15]. Sinha and Yadav (2023) have postulated that this has resulted into supply chain gains of twelve percent in terms of saving on time and costs.

Vendor Management: The consumers, especially hospitals and clinics have been in a position to develop more efficient organizational relationships with GST compliant suppliers [16], which has helped in cutting down the procurement costs and assured delivery medical equipment without previous problems that arose due to tax issues.

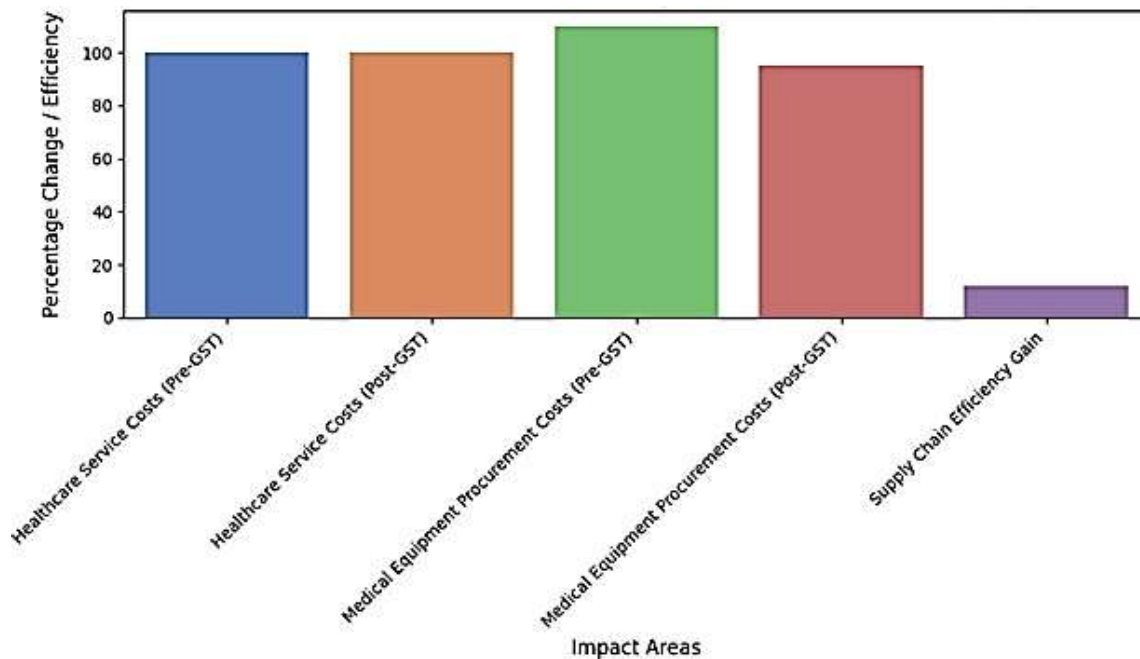


Figure 3: GST Implementation on Health care Services Delivery and Medical Equipment Supply Chains

4. Impact of implementation of GST on Healthcare Service Delivery and Medical Equipment Supply Chains

According to GST, the government's effort was to make the taxes easy to understand and collected by unifying many of the taxes into a single tax collection process. In the field of the healthcare sector, GST has impact the costs structures, service delivery, and order pattern of n structures, service delivery, and order pattern of medical equipment [17]. Although it has made some positives like elimination of cascading taxes and simple billing challans challenges like rise in compliance cost, compliance burden of indirect taxes and complicatedity of supply chain [18]. These changes have been realized across all the health care facilities though the impact has been more realized with private health care facilities as cost is usually passed to the patients.

Table 1: Impacts of implementation of GST

Aspect	Before GST	After GST	Impact/Result
Cost of Healthcare Services	Multiple indirect taxes (e.g., service tax, VAT) leading to increased operational costs.	GST on non-medical services and supplies increases indirect costs.	Increase in service costs by 7-10% due to compliance and administrative overheads.
Procurement Costs for Medical Supplies	Taxes on raw materials led to increased costs in medical supplies.	GST allows for input tax credits, reducing raw material costs.	Decrease in procurement costs by 5-7% for essential supplies.
Medical Equipment Pricing	High cascading taxes due to complex tax system.	Simplified tax structure with GST applied at varying rates based on product	Reduced production costs, but price variations depending on equipment

		categories.	type (5%-18% GST).
Inventory Management	Complicated tax calculations and state-wise variations.	GST standardizes tax rates, enabling better tracking and input tax credits [19].	Improved inventory management due to better tax compliance and streamlined supply chain.
Healthcare Service Provision	High taxation burden on hospital maintenance services and non-medical goods.	GST on non-medical services increases indirect costs; however, some tax exemptions apply to critical healthcare services.	Increased overheads in private facilities, but public sector services remain mostly unaffected.
Compliance and Administrative Costs	Multiple tax filings and documentation for various taxes.	Single tax system, but more extensive documentation and compliance for GST.	Increased compliance costs (logistics, tax filing, etc.) by 5-10%.
Supply Chain Efficiency	Delays due to inter-state tax barriers and complex documentation.	GST simplifies interstate taxation, improves goods movement [20].	Increased supply chain efficiency by 12%, with quicker transit times and lower logistical costs.
Vendor-Supplier Coordination	Inconsistent tax rates and delays in inter-state supply chains.	Standardized GST tax rates for medical equipment suppliers across states.	Better coordination between suppliers and healthcare providers, resulting in more consistent delivery timelines.

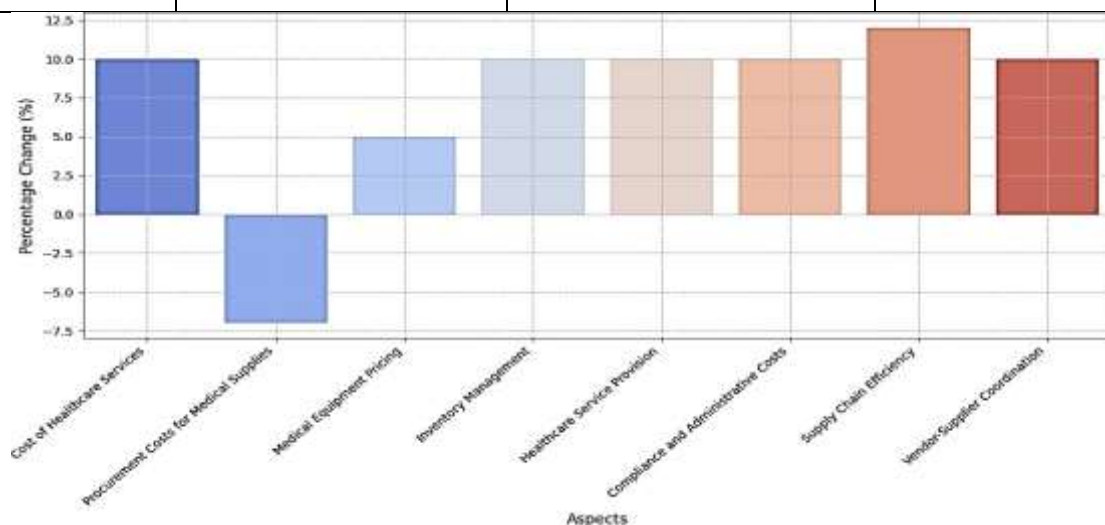


Figure 4: Impact of implementation of GST on Healthcare Service Delivery and Medical Equipment Supply Chains

On the understanding of the improvement of the healthcare services and the supply chain of medical

equipment before and after the implementation of GST. It points out the fact that cost of providing healthcare services have gone up by 7-10 percent with extra compliance and administrative expenses, whereas cost of medical inputs have come down by 5-7 percent because of input tax credit. GST made the inventory much easier to manage therefore increasing the efficiency of the supply chain by 12% despite the complexities that are evident in several tax rates applied on distinct medical devices.

Conclusion:

There was unequal taxation as it depended with the classification of the equipment in the medical facilities, and this has affected the prices of the various equipment that was manufactured by the respective companies. The launch of GST in India has also affected the health care services and supply chain management of medical equipment through propound changes in revenue systems. Despite health care service margins rising by 7-10% due to the compliance and administrative burdens, medical equipment supply chain enjoyed 5-7% decline in procurement cost for raw materials through input tax credits. The equal rates of taxes were adopted and this lead to increase of efficiency especially in the supply chain network meaning that the logistics hitches and inter- state structures were enhanced by 12%. However, it will still pose some problems such as the variation in tax rates for the various categories of the medical equipment and the extra paper work. In a broad view, GST has brought efficiency in procurement, operational clarity and supply chain effectiveness and thus there is huge cost cutting but further tuning of the GST policy can prove good for health care sector.

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