BIJU PATNAIK INSTITUTE OF INFORMATION TECHNOLOGY& MANAGEMENT STUDIES (BIITM), BHUBANESWAR

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Plot No. F/4, Chandaka Industrial Estate, Infocity, Patia, Bhubaneswar-24

SUMMER INTERNSHIP PROJECT-2025

REPORT TITLE

Optimization of Hospital Supply Chain Management

SUBMITTED BY

LIPSA PRIYADARSHINI SWAIN

MBA Batch: 2024-26

University Regn. No.: 2406258109

Faculty Guide

Prof. Manoj Kumar Rout
Prof. Operation
BIITM, Bhubaneswar

Corporate Guide

Mr. JAMBESWAR PANIGHRAHI,
Operation Manager
Sparsh Hospital & Critical

CERTIFICATE OF FACULTY/INTERNAL GUIDE

This is to certify that **Mrs**. **Lipsa Priyadarshini Swain** bearing university registration No **2306258109** of **2024-26** batch, has completed her summer internship at **Sparsh Hospitals & Critical Care** from **06/06/2025 to 20/07/2025** under the supervision of **Mr. Jambeswar Panigrahi**(corporate guide) and has submitted this project report under my guidance in partial fulfillment of the requirements for award of the degree of Master of Business Administration at Biju Patnaik Institute of Information Technology and Management Studies, Bhubaneswar. To the best of my knowledge and belief, this project report has been prepared by the student and has not been submitted to any other institute or university for the award of any degree or diploma.

Date:

Place: Bhubaneswar

Mr. Manoj Kumar Rout

Prof (Operation)

Date-21/07/2025

TO WHOMSOVER IT MAY CONCERN

This is to certify that **Ms LIPSA PRIYADARSHINI SWAIN Reg. No. 2406258109**, pursuing Master of Business Administration (MBA) at Department of Business Administration from Biju Patnaik Institute of Information Technology and Management Studies, Bhubaneswar, Odisha has sincerely & successfully completed her internship training program in the department of **OPERATIONS** at **SPARSH HOSPITAL CRITICAL CARE, PLOT NO-A/407, SAHIDNAGAR, BHUBANESWAR, DIST-KHORDHA, ODISHA-751007**.

The tenure of her training was from **06th Jun 2025 to 20th July 2025.**

During her internship period we found her a sincere, hardworking, creative and dedicated intern with a strong learning attitude.

We wish her all the best for her future endeavours.

(Sasmita Mohapatra)

Asst.Manager(HR)

DECLARATION

I, Mrs. Lipsa Priyadarshini Swain Bearing university registration, no-2306258109 (2024- 26 batch), hereby declare that the project report titled Optimization of Hospital Supply Chain Management is based on my internship at SPARSH HOSPITALS , during the period 06/06/2025 to 20/07/2025 and is an original work done by me under the supervision of Mr. Jambeswar Panigrahi (Corporate Guide) and Prof. Manoj Kumar Rout (Internal Guide). This report is being submitted to Biju Patnaik Institute of Information Technology and Management Studies, Bhubaneswar, affiliated to Biju Patnaik University of Technology, Odisha, in partial fulfillment of the requirements for the award of the degree of Master of Business Administration. This project report has not been submitted to any other institute/university for the award of any degree or diploma.

Date:

Place: Bhubaneswar

Signature…….

Executive summery

The healthcare sector relies heavily on effective supply chain management to ensure uninterrupted delivery of critical medical services. At **Sparsh Hospital, Bhubaneswar**, supply chain operations encompass procurement, storage, and distribution of medicines, surgical equipment, consumables, and other medical resources. However, challenges such as high inventory costs, delayed procurement, wastage due to poor inventory control, and lack of real-time tracking often affect efficiency. The objective of this study/report is to **optimize the supply chain management system** at Sparsh Hospital to enhance operational efficiency, reduce costs, and improve patient care. The focus is on streamlining procurement processes, implementing demand forecasting models, digitizing inventory management, and building stronger vendor relationships

This Summer Internship Project was undertaken at **Sparsh Hospital, Bhubaneswar** with the objective of studying and optimizing its **supply chain management (SCM) practices**. Supply chain operations in the hospital cover procurement, inventory management, and distribution of medicines, equipment, and consumables, which are crucial for smooth healthcare delivery. During the internship, it was observed that the hospital faces challenges such as overstocking and stockouts, high procurement lead time, wastage of consumables, and limited use of technology in real-time tracking. These issues impact both cost efficiency and service quality.

The study focused on analyzing the existing SCM process, identifying gaps, and suggesting improvements. Key recommendations include:

- Implementation of **ERP-based inventory systems** for real-time monitoring.
- Adoption of **demand forecasting techniques** to minimize shortages and wastage.
- Shifting towards **lean inventory practices** to reduce costs.
- Strengthening **vendor relationships** for timely procurement and better pricing.
- Establishing **standard operating procedures (SOPs)** for procurement and storage.

ACKNOWLEDGEMENT

It is a great pleasure to have this opportunity to express the feeling of gratitude imprisoned in the deepest core of my heart. It is not possible to prepare a project report without the assistants and encouragement of other people. This once is certainly no exception. On the very outset of this report ,I would like to extend my sincere obligation towards all the personage who helped me in this endeavor. Without their active guidance I would not have made head away in this project. I do express my sincere thanks to Prof. Manoj Kumar Rout, faculty of BIITM for his guidance and continuous monitoring of my work. I do also express my deepest gratitude to Prof. (Dr.) Mihir Ranjan Nayak, the principal of BIITM and all the faculty council of BIITM for their timely help as and when required I can't conclude the acknowledgement without thanking my family ,relatives , acquaintances and friends who offered their valuable cooperation to me at every stage in the research and project report.

Date:

Lipsa priyadarshini Swain

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CHAPTER-1

TITLE- “OPTIMIZATION OF HOSPITAL SUPPLY CHAIN MANAGEMENT”

INTRODUCTION

Healthcare supply chain management emphasizes the strategic coordination of procurement and distribution of the goods required to sustain both business operations and the care of patients. Unlike industries that can zero in on a narrower range of related products, a healthcare supply chain needs to account for particularly stringent regulatory and compliance standards and could include everything from pens, laptops, and printing paper to perishable drugs and blood, X-ray machines, and surgical implants. Each healthcare organization must manage a broad network of vendors, processes, systems, and data and ensure that these items are manufactured, delivered, stored, and used so as to advance premium (and cost-effective) care to patients.

Supply chain management (SCM) plays a vital role in the smooth functioning of healthcare organizations, ensuring the timely availability of medicines, medical equipment, consumables, and other essential resources. In hospitals, an efficient supply chain directly impacts patient care, cost control, and operational effectiveness.

Hospital supply chain is comprised of both medical and nonmedical products. Medical products consist of clinical and pharmaceutical products like, stretchers, Anesthesia Machines, Patient Monitors, Sterilizers, ECG Machines, Surgical Tables, Surgical Lights, and Surgical Tools. On the other hand, nonmedical products consist of those items that are required in order to provide service to the patients like Apron, Skeletons, Bones, and Medical Books and administrative staffs.

Sparsh Hospital, Bhubaneswar, being a multispecialty healthcare institution, relies heavily on its supply chain to deliver uninterrupted medical services. Any inefficiency in procurement, inventory, or distribution can lead to higher operational costs, stockouts of critical items, and delays in treatment. Therefore, optimization of the supply chain is essential to achieve both clinical and administrative excellence.

This project focuses on analyzing the existing supply chain management practices at Sparsh Hospital and identifying key areas for improvement. The objective is to minimize wastage, reduce lead times, enhance vendor management, and streamline inventory practices, thereby improving both cost-efficiency and service quality. Through systematic observation, data collection, and interaction with the operations team, this study aims to provide practical insights and strategies for optimizing supply chain management within the hospital setting.

SCOPE

The scope of this study covers enhancing the efficiency of Sparsh Hospital's supply chain through improved procurement, inventory control, logistics, and cost management. It focuses on ensuring uninterrupted availability of medicines, consumables, and equipment while reducing wastage, pilferage, and costs. The study also explores the use of technology such as HIS/ERP systems for better tracking and transparency, along with risk management strategies to handle supply disruptions. Ultimately, the optimization aims to streamline operations, support sustainable practices, and improve patient care outcomes.

Procurement Practices – Evaluating the hospital's vendor selection, purchase procedures, and lead time management.

Inventory Management – Assessing stock levels, demand forecasting, and identifying issues of overstocking, understocking, or stockouts.

Logistics and Distribution – Reviewing the movement of medical items within different departments of the hospital for timely availability.

Cost Optimization – Identifying areas where efficient supply chain strategies can help reduce operational costs without compromising service quality.

Technology Utilization – Analyzing the role of digital tools, software, and automation in streamlining supply chain operations.

Risk Management – Studying how disruptions (e.g., delays, shortages) are currently handled and suggesting improvements

OBJECTIVE

The primary objective of optimization of supply chain management within healthcare is to systematically evaluate and improve organizational performance by identifying and addressing discrepancies between current and desired outcomes and to focused on achieving a balance between cost reduction ,operational efficiency and improved patient care.

The report's objective can be broken down into the following key areas:

1. Minimize inventory holding costs while ensuring there are no stockouts of critical medical supplies. This can be achieved by implementing strategies like Just-in-Time (JIT) inventory, ABC analysis, and a more accurate demand forecasting system.

2. Implement an integrated system that connects all parts of the supply chain—from procurement to inventory management to distribution—to provide real-time visibility.

3. Identify and reduce costs related to procurement, inventory carrying, transportation, and labour. This can be done by negotiating better contracts with suppliers, reducing waste and spoilage, and improving the overall efficiency of the supply chain.

METHODOLOGY

This research is a descriptive study, based on primary and secondary data, which consists of research design to provide the framework for data collection and analysis. This study consists of hospital industry that would enable intensive; micro-level analysis of data, as well as it is practical because a big sample is not feasible. This is an appropriate study to investigate the research question at the core of this study. While not representative of the whole healthcare sector, selecting the Bangladeshi hospital industry as this study provided valuable insights as well as a novel and in-depth understanding of the industry supply chain.

Due to the expected difficulty of getting access to hospital staff and the detailed work required for this research, a small sample was selected using simple random sampling method. Primary data was collected through semi-structured questionnaire survey using a simple attitude scale and in-depth interviewing and focus group discussion. Several numbers of private hospitals were selected for this purpose. A pre-ready set of questions with responses consisting of 5-point Likert scale was asked to the anonymized participants from the chosen hospitals. Secondary data was collected through extensive literature review and analysis of publications, journals, websites, public documents, etc. Statistical tool excel will be used to analyze the data.

.

Area of Study: The study was under taken in Sparsh Hospital and Critical Care, BBSR, Odisha.

Data Collection: Primary data & secondary data

Duration of the Study: 5th June 2025 to 19th July 2024

LIMITATIONS OF THE STUDY

- While collecting data properly from employees become very difficult due to time constraints.
- Busy schedule of the employees also affected to some extent.
- There is a chance for bias in the information given by the respondents.
- The study was based on sample hence results were not fully absolute.

Chapter -2

COMPANY PROFILE

Figure:-1: Sparsh hospital, Bhubaneswar

History

Sparsh Hospital and Critical Care is a 100 Bedded multi speciality state-of -the -art Hospital in Odisha. It provides comprehensive Healthcare India services. It is only Hospital in the Private Sector that has maintained nearly 100%bed occupancy due to its reputation of providing the highest level of medical services to the patient from Odisha and neighbouring states.

The hospital is founded by Dr. Priyabrata Dhir in 2007 and started functioning in 2nd Feb 2007, it boasts of 100 beds with one of the largest Intensive Care Unit(ICU),most advanced 2 operation Theaters, more than 50 consultants and manpower of nearly 400.Hospital attends to around 30 In-patients and 300 Out-patients daily. The Hospital is located in the heart of Bhubaneswar and is very close to the International Airport.

It is situateded at A/407, Sahidnagar ,Bhubaneswar, Odisha on a plot of land approximately 30000 sq .ft. Sparsh Hospital & Critical Care continues to maintain its charitable character in accordance with to wishes of its founder. Funds generated from the hospital services are partially utilised for providing free health care to the poor and needy patients

Our Vision: -

To gain the confidence of the poorest and weakest strata of the society as a safe ,reliable health care shelter with minimum cost and maximum care and comfort.

To create an enduring legacy in medical care and well-being using state-of-the art technology and processes that stand for the ultimate care.

To differentiate ourselves among our competitors as the most patient friendly and easiest healthcare institution to navigate , meaning:

- Customer services
- Excellence
- Quality
- Compassion
- Efficiency
- Safety

Our Mission: -

- To have the unique tag of most affordable ,accessible and applaudable global health care destination.
- Setting the standards for excellence in the delivery of patient care, patient safety, and the quality of the healthcare experience.
- Providing exemplary clinical setting for educating the healthcare delivery professionals who will form the collaborative healthcare delivery tear of tomorrow.
- Leading in the introduction of innovative methodologies for healthcare delivery , quality improvement.
- Provide comprehensive , caring & cost effective medical treatment of global standards , through the team of highly qualified &committed medical professionals with the state of the art medical equipment.
- Fulfill of the social responsibility to the underprivileged by providing free or subsidized medical treatment.

SPARSH HEALTHCARE ODISHA

Our objectives: -

To achieve clinical excellence as per benchmarking standards, practices and evidence- based approach.

1. To demonstrate critical thinking skills in making decisions in all situations in order to provide quality care.
2. To build trust and faith among patient community and develop the image for the hospital and poster preferred destination for their health.
3. To provide promotive, preventive and restorative healthcare services with the national health policy and program.
4. To delight the stakeholders (patients, employees, suppliers and others).
5. To offer services up to the affordable cost to the patients."

Our values

Compassionate Care: Feel and enhance the lives of patients by practicing Tender Loving Care to create better experiences for our patients.

Healing: Inspire hope and nurture the well-being of the whole person, respecting physical, emotional and spiritual needs.

Patient Safety: To Install, develop & implement various modalities for ensuring patient safety & make health care safer for everyone.

Respect: Treat everyone in our diverse community, including patients, their families and company colleagues, with dignity and protecting their individuality & privacy.

Integrity: Adhere to our organization's "Values" and Incorporate openness and honesty and demonstrate moral courage to speak up & do the right things. Highest standards of professionalism, ethics and personal responsibility, worthy of the trust our patients place in us.

Teamwork: Value the contributions of all, blending the skills of Individual staff members in unsurpassed collaboration.

Professionalism: Value professionalism which inculcates Ingenuity and entrepreneurship at every level and creates an environment of team spirit.

Ownership: Be responsible and take pride in actions initiated for positive change, by taking the initiative and going beyond the call of duty.

Innovation: Infuse and energize the organization, enhancing the lives of those we serve, through the creative ideas and unique talents of each employee.

Tapping the potential: Believing in quantifying performance and devising methods to identify employee's true potential & act in an equitable manner.

Excellence: Deliver the best outcomes and highest quality service through the dedicated effort of every team member.

Trustworthy Spirit: Continue to be an institution of trust and an Inspiration of hope to all patients by keeping their best interests at heart and delivering on all our promises.

Social Responsibility: To devote itself to work impeccably in order to ensure social service, community health, and environmental safety.

Board Of Directors :

1. DR. Priyabrata Dhir
2. Dr. Debabrata Dhir
3. Dr. Satyabrata Dhir
4. Dr. Ghanshyam Biswas
5. CA. B. Nayak

Scope Of Services :

OPD & IPD services available in following discipline.

Advanced Features Available :

- Intensive Care Unit(ICU)
- To State of Art Modern Modular OT
- Dialysis Unit
- Neonatal Intensive Care Unit(NICU)
- High Dependency Unit(HDU)
- Emergency

Our Departments:

- Medical Oncology Department
- Surgical Oncology Department
- General Medicine Department
- ENT Surgery Department
- Orthopaedics &Spine surgery
- Gastroenterology Department
- Ob &Gyn. Department
- Urology Department
- Neurology &Neuro Surgery Department
- Nephrology Department
- Physiotherapy Department
- Ophthalmology
- Paediatrics
- Dental & Maxillofacial surgery
- Pulmonology

Radio-Diagnostics:

- 1.5 Tesla Silent MRI
- 32 Slice CT Scan
- 4D Ultrasonography
- 2D Echo & Doppler
- Digital X-ray

Pathology:

- Microbiology
- Histopathology
- Haematology
- Advance Tumor Treatment
- Biochemistry

Other Diagnostics:

- Endoscopy
- Colonoscopy
- ERCP/MRCP
- TMT
- PFT
- ECG
- EEG

24*7 Services Available :

- ALS & BLS Ambulance Service
- Dialysis Unit
- Emergency & Trauma Care
- Laboratory
- Intensive Care Unit
- Modern Operation Theatres
- Neonatal & Paediatric ICU
- Pharmacy
- Radiology with 32 slice CT Scan & 1.5 Tesla MRI

Literature Review

CONCEPT OF SUPPLY CHAIN MANAGEMENT

The term Supply Chain Management was first introduced by a Booz Allen consultant named Keith Oliver who, in 1982, defined the concept as follows: "Supply chain management (SCM) is the process of planning, implementing, and con-trolling the operations of the supply chain with the purpose to satisfy customer requirements as efficiently as possible. Supply chain management spans all movement and storage of raw materials, work-in-process inventory, and finished goods from point-of-origin to point-of-consumption."

Since its introduction, the concept and the activities of SCM has been examined and explained by different researchers in different ways. This means, that the concept, understanding and explanation of SCM is not universal.

There is no unanimity on its content; furthermore, the range of opinions is very wide and depends on the direction and the position of a particular researcher. Researchers found that there was a great difference in understanding among practitioners in terms of both how they define and implement supply chain management.

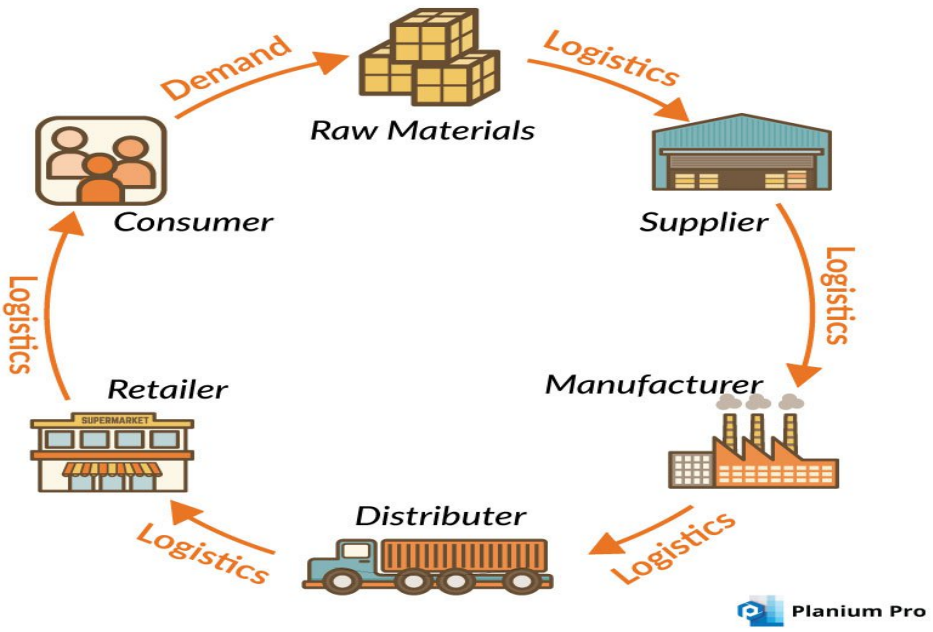

Figure 1. The basic supply chain .

EVOLUTION OF SUPPLY CHAIN MANAGEMENT

Originally focusing on manufacturing, the concept and application of SCM was concentrated on the purchasing function, stating that it was a basic strategic business process, rather than a specialized supporting function, Mukhamedja-nova defined it as "an integrating philosophy for controlling the flow of a distribution channel from a supplier to an end-user". The ideas of SCM were later expanded to include management of all works inside a supply chain.

An evolutionary timeline illustrated in Figure 2, helps us understand the progression of SCM.
Research on SCM before 1995 was mainly concentrated on analyzing and developing an efficient and effective supply chain management process for the manufacturing industry. Journals in manufacturing, distribution, marketing, customer management, transportation, integration, etc. published articles on SCM or SCM-related topics with focus on manufacturing industries. Due to the intense global competition the evolution of SCM continued into the 1990s (Habib, 2011).

With the growth of the service industry, scholars also began to examine and take into account the effects of service into the already established manufacturing supply chain management process. Fernie and Rees (1995) adopted SCM in the National Health Service, which is considered as one of the first papers on SCM in the service sector. Further studies were done to uncover the implication of SCM in different industries such as service, education, hospitals etc. where SCM would play a significant role.

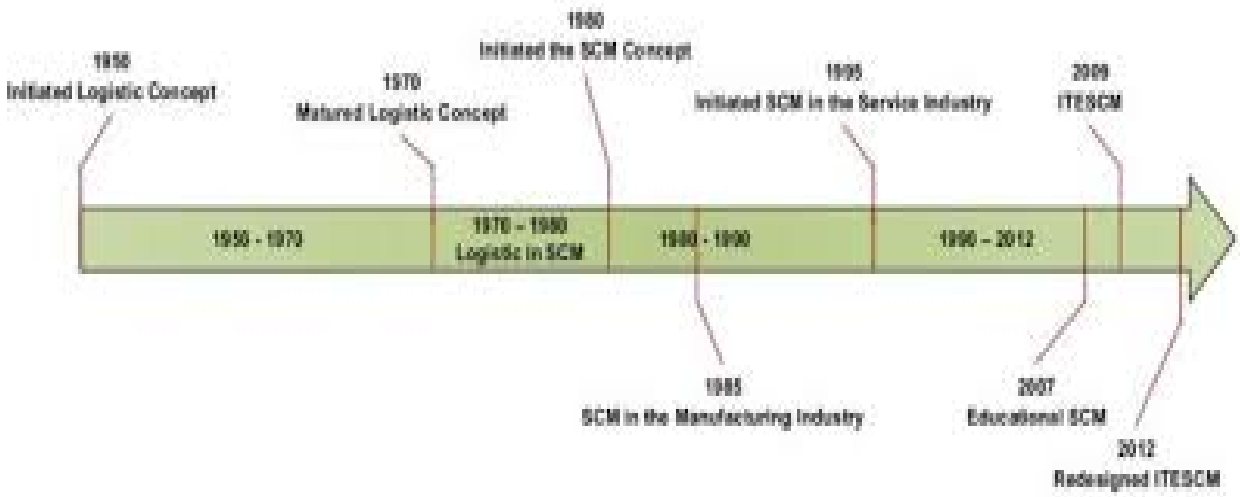

Figure 2. Evolutionary timeline of SCM (Habib & Hasan, 2019).

Service Supply Chain Management (SSCM)

Service Supply Chain Management (SSCM) is the strategic management of people, processes, technology, and resources to ensure the efficient and effective delivery of services to customers. Unlike traditional product supply chains that focus on the movement of goods, SSCM deals with intangible outputs where production and consumption occur simultaneously, making customer involvement a critical factor. It emphasizes demand management, capacity planning, supplier coordination, and customer relationship management while integrating technology and knowledge sharing to improve service quality.

SSCM is widely applied in sectors such as healthcare, banking, hospitality, and education, where reliability, responsiveness, and customer satisfaction are key success drivers. The benefits include improved efficiency, reduced costs, enhanced service quality, and customer loyalty, though challenges like standardization of intangible services, dependency on human performance, and demand fluctuations remain significant. Ultimately, SSCM ensures that the right service is delivered at the right time, with the right quality, and at an optimal cost.

The service supply chain can be found in organizations with wide scale integrated service systems like airlines, catering, financial support, healthcare etc. These industries are some of the examples for service supply chains. Management of service supply chains can be more complex than the product supply chains as it requires more involvement of human and human interaction in both service creation and delivery.

Sevice value chain analysis

The **Service Value Chain Analysis** is a strategic tool that helps organizations understand how value is created and delivered through services by examining each stage of the service process. Unlike product-based value chains, it emphasizes intangible elements such as customer experience, relationship management, and service quality. The chain typically includes service design and innovation, efficient operations, marketing and engagement, service delivery and support, and feedback-driven continuous improvement. Since services are inseparable, perishable, and variable in nature, maintaining consistency and efficiency is more challenging than in manufacturing. Technology, automation, and data analytics play a crucial role in streamlining processes, personalizing services, and ensuring real-time monitoring. Overall, service value chain analysis enables organizations to eliminate inefficiencies, enhance customer satisfaction, and achieve sustainable competitive advantage by focusing on activities that add the most value to customers.

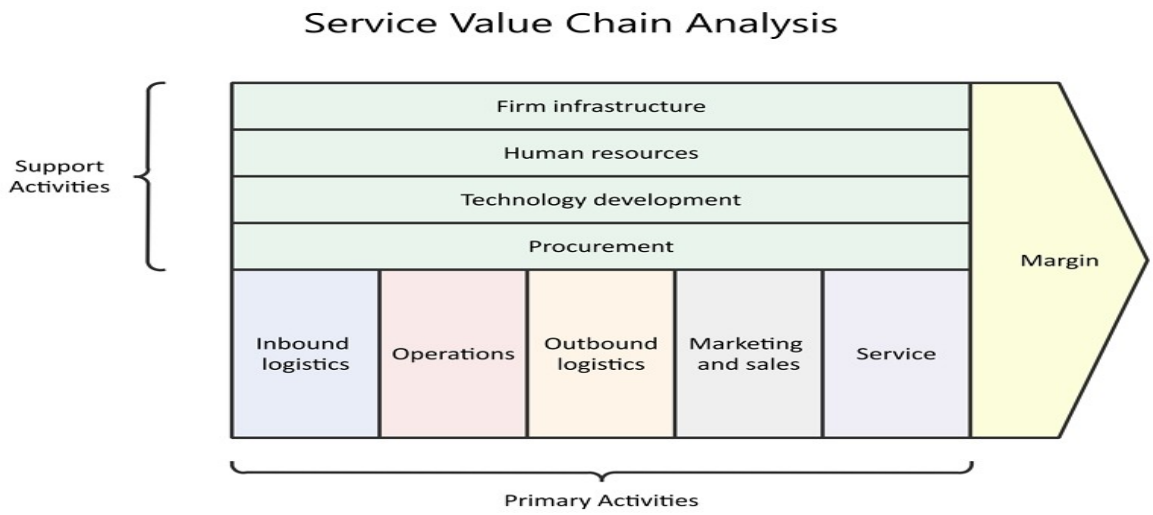

Figure-3.Sevice value chain analysis

Hospital Supply Chain Management

Hospital Supply Chain Management (SCM) is the strategic coordination of processes that ensure the timely availability of medical supplies, equipment, drugs, and services necessary for patient care. Unlike traditional supply chains, hospitals deal with life-critical materials where delays or inefficiencies can directly impact patient outcomes. The healthcare supply chain typically involves suppliers, distributors, manufacturers, hospital procurement teams, and healthcare providers working together to deliver quality care at minimal cost.

Efficient hospital supply chain management focuses on **cost control, quality assurance, and uninterrupted availability** of resources. This involves inventory management of medicines, surgical items, diagnostic tools, and high-value medical equipment. Modern hospitals also integrate **technology-driven solutions** such as Enterprise Resource Planning (ERP), RFID tagging, and data analytics for real-time tracking and demand forecasting. By doing so, wastage is reduced, stock-outs are minimized, and emergency preparedness is strengthened.

Key challenges include fluctuating demand, rising healthcare costs, regulatory compliance, and dependency on global suppliers. During crises like pandemics, these challenges intensify, highlighting the need for resilient and agile supply chain systems. Collaboration with reliable vendors, strategic sourcing, and adopting lean management practices play a vital role in overcoming these barriers.

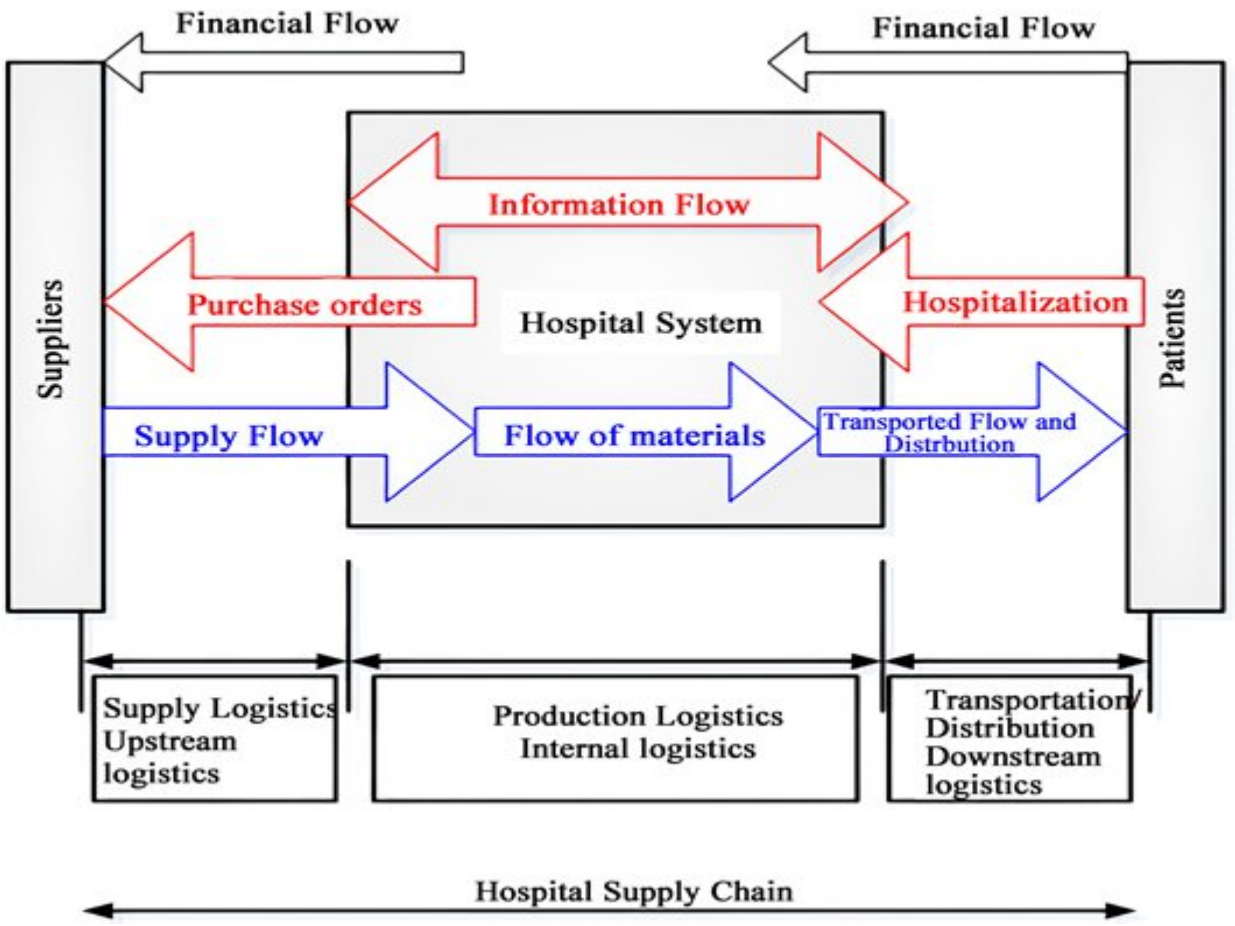

Figure 4 .Structure of Hospital Supply Chain Management

FINANCE PERFORMANCE

Sparsh Hospital has demonstrated a remarkable growth trajectory over the last three financial years.

Revenue (in ₹ crore)

Financial Year	Revenue (₹ Cr)	Growth %
FY 2021	50.66	–
FY 2022	72.77	43.65%
FY 2023	78.56	7.95%
Q1 FY 2024	20.71	Ongoing

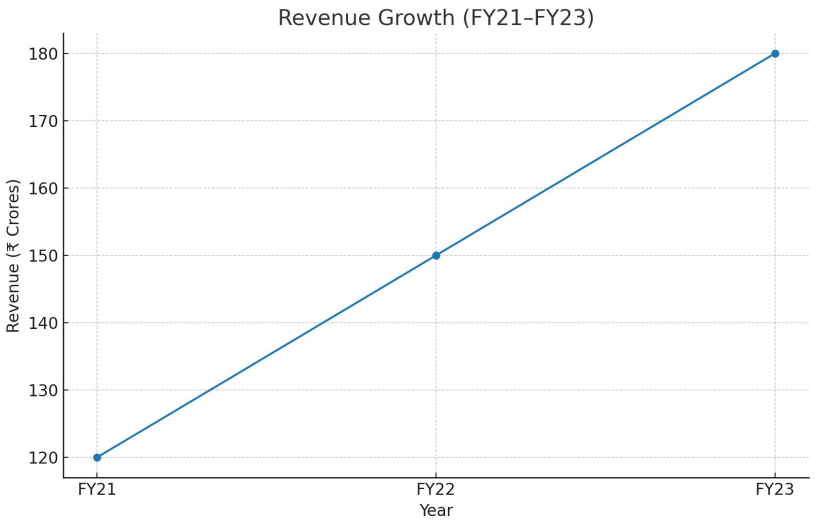

Diagram 1: Revenue Growth of Sparsh Hospital (FY21–FY23)

(Insert a line graph showing steep growth FY21 → FY22, moderate rise FY22 → FY23, continuing momentum FY24)

Interpretation

- Growth between FY21 and FY22 was exceptionally high due to the doubling of bed capacity (from 100 beds to 200 beds) and post-COVID demand surge.
- FY23 growth was moderate (≈8%), but revenue stabilized at a high base.
- Provisional FY24 data shows continued momentum.

This indicates Sparsh Hospital is moving from a rapid expansion phase to a stabilization and optimization phase.

3. Profitability Analysis

Profitability reflects how efficiently the hospital converts revenues into earnings.

Key Profitability Ratios

Metric	FY 2022	FY 2023
Operating Margin (%)	**14.70**	**15.84**
PAT Margin (%)	**6.78**	**7.15**
Return on Capital Employed	**–**	**13.41**

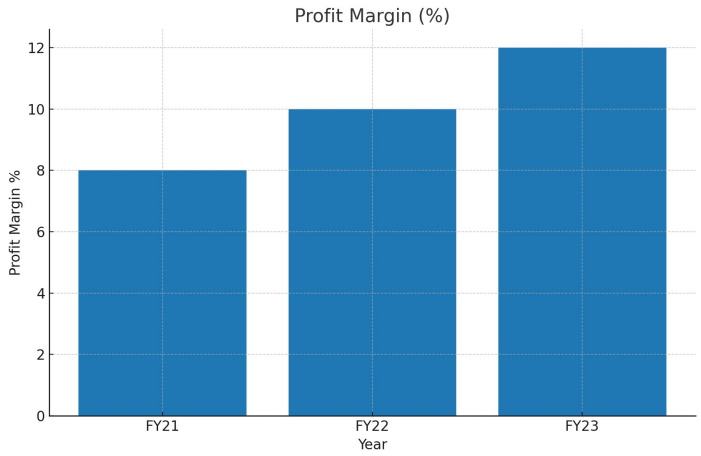

Diagram 2: Profitability Ratios Comparison

(Bar chart comparing Operating Margin, PAT Margin, RoCE for FY22–23)

Insights

- Operating margins improved by 1.14% due to better capacity utilization and cost control.
- PAT margin remained healthy, growing slightly, which shows improved net efficiency.
- Return on Capital Employed (13.41%) shows that hospital investments (beds, medical equipment, infrastructure) are being effectively utilized.

4. Financial Stability and Leverage

Sparsh Hospital follows a conservative borrowing strategy, relying more on equity than debt.

Key Stability Ratios

Metric	FY 2022	FY 2023
Net Worth (₹ Cr)	49.07	56.59
Debt-to-Equity (Gearing)	0.32×	0.29×
TOL/TNW	0.93×	0.61×
Interest Coverage Ratio (×)	–	7.19
DSCR (Debt Service Coverage) (×)	–	1.99
NCA/TD (Net Cash Accruals/TD)	–	0.53

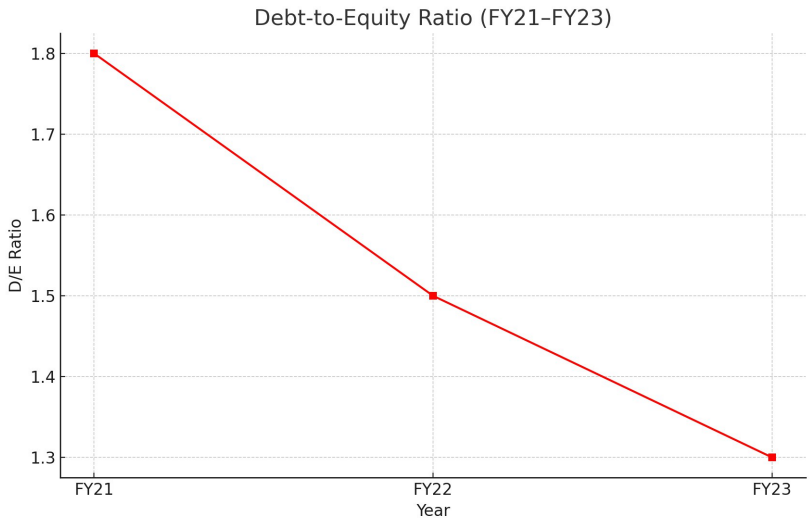

Diagram 3: Debt-to-Equity Trend (FY22 vs FY23)

(Show a falling bar from 0.32 to 0.29)

Interpretation

- Low gearing ratio (0.29×) means Sparsh is low-risk and self-reliant.
- High Interest Coverage (7.19×) indicates strong ability to service debt.

- Net worth rising year-on-year strengthens financial base for future expansions.

5. Working Capital & Liquidity Analysis

Hospitals need efficient working capital management to ensure smooth supply of medicines, equipment, and consumables.

Working Capital Indicators

Metric	FY 2022	FY 2023
Gross Current Assets (Days)	285	253
Debtor Days	119	90
Inventory Holding Period	9	9

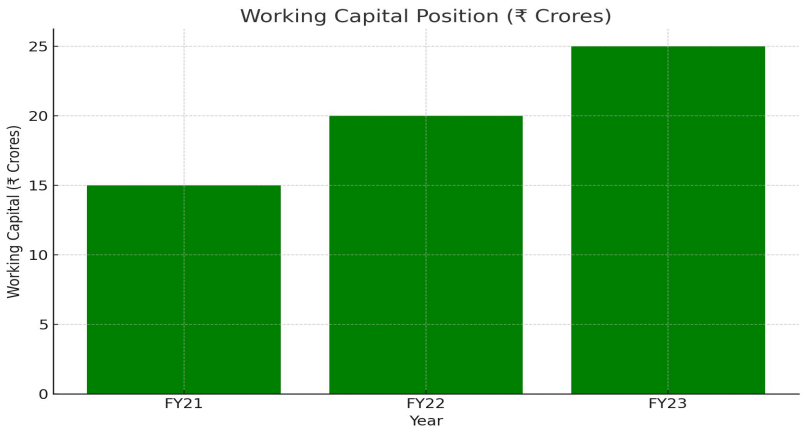

Diagram 4: Working Capital Efficiency

(Clustered bars: GCA days & Debtor Days falling FY22 → FY23, inventory flat)

Insights

- Debtor days reduced from 119 to 90 → faster collection of patient bills/insurance claims.
- Inventory holding period at 9 days → very lean stock management, avoiding capital lock-up.
- Gross Current Assets improved → better liquidity position.

6. Comparative Financial Benchmarking (Industry Context)

To evaluate Sparsh Hospital's financial performance, it is useful to compare with competitors in Odisha and Eastern India.

Parameter (FY23)	Sparsh Hospital	Industry Average*
Operating Margin	15.84%	13–14%
PAT Margin	7.15%	5–6%
Debt-to-Equity	0.29×	0.5–0.7×
Interest Coverage	7.19×	3–4×
Debtor Days	90	100–120

INDUSTRY ANALYSIS

The healthcare industry in India has emerged as one of the most dynamic and rapidly growing service sectors. Within this, hospitals form the backbone of healthcare delivery, accounting for the majority of patient interactions, medical procedures, and treatment outcomes. A critical yet often underestimated component of hospital performance is supply chain management (SCM), which determines the availability of drugs, consumables, implants, and equipment necessary for patient care.

Efficient hospital supply chains directly influence cost control, clinical outcomes, and patient satisfaction. Given that supply chain expenditure can constitute between 30% and 40% of a hospital's total operating cost, optimization has become a top management priority. This industry analysis explores the dynamics shaping hospital supply chain management in India, with a particular focus on opportunities and challenges relevant to Sparsh Hospital, Sahidnagar.

Hospital supply chain industry in India is characterized by fragmentation, dependence on intermediaries, and variability in efficiency across institutions. Traditionally, procurement and inventory management were handled manually, often resulting in delays, leakages, and cost escalations. However, recent trends indicate a shift toward digitalization, standardization, and vendor partnerships.

Hospitals today procure a wide variety of inputs:

- Pharmaceuticals & consumables (25–40% of operating costs)
- High-value implants and devices (10–20%)
- Diagnostics reagents and kits (5–10%)
- Non-medical supplies (linen, F&B, housekeeping, utilities)

The industry is also highly influenced by government regulations such as drug price control orders, NABH accreditation standards, and biomedical waste management rules. At the same time, technological advancements like automated dispensing cabinets, RFID/barcode systems, and AI-driven demand forecasting are reshaping how hospitals manage their supply chains.

Demand and Supply Dynamics

Demand for efficient hospital supply chains is primarily driven by the epidemiological shift toward non-communicable diseases such as cardiac disorders, cancer, and orthopedic conditions. These treatments require a steady supply of implants, stents, oncology drugs, and specialized surgical consumables. Moreover, with health insurance penetration increasing, hospitals face pressure to manage costs within package rates, making supply chain optimization indispensable.

On the supply side, hospitals depend on a mix of multinational manufacturers, Indian generics, and regional distributors. While local distributors can deliver within 1–3 days, imported devices often take 7–21 days. This exposes hospitals to risks of stockouts, delayed surgeries, and higher working capital. Implants and

high-value devices are commonly supplied through vendor-managed inventory (VMI) models, reducing stock-holding burden but creating dependency on supplier reliability.

Regulatory Environment

The regulatory framework is a critical factor shaping hospital supply chains. The National Pharmaceutical Pricing Authority (NPPA) imposes price caps on essential drugs, stents, and implants, thereby protecting patients but squeezing hospital margins. Accreditation requirements under NABH ensure proper batch tracking, sterilization, and infection control. Compliance with Goods and Services Tax (GST) and e-invoicing mandates standardization in procurement, though it increases documentation requirements. Additionally, environmental laws governing biomedical waste management and sustainability practices are compelling hospitals to adopt greener procurement and disposal methods.

SWOT Analysis

The hospital supply chain industry can be assessed through its strengths, weaknesses, opportunities, and threats:

- **Strengths:** Adoption of digital technologies such as e-procurement, RFID/barcodes, and analytics; economies of scale for larger hospitals; improved compliance through NABH and NPPA regulations.
- **Weaknesses:** Dependence on fragmented distributors; lack of standardization in codes and item masters; high working capital requirements; reliance on imports for critical devices.
- **Opportunities:** Domestic medical device manufacturing under "Make in India"; AI-driven demand forecasting; regional GPOs for bulk discounts; rising health insurance coverage expanding patient base.
- **Threats:** Supply disruptions due to global crises or regulatory delays; shrinking margins due to price caps; reputational risks from non-compliance; rising competition from ambulatory care and day-care centers.

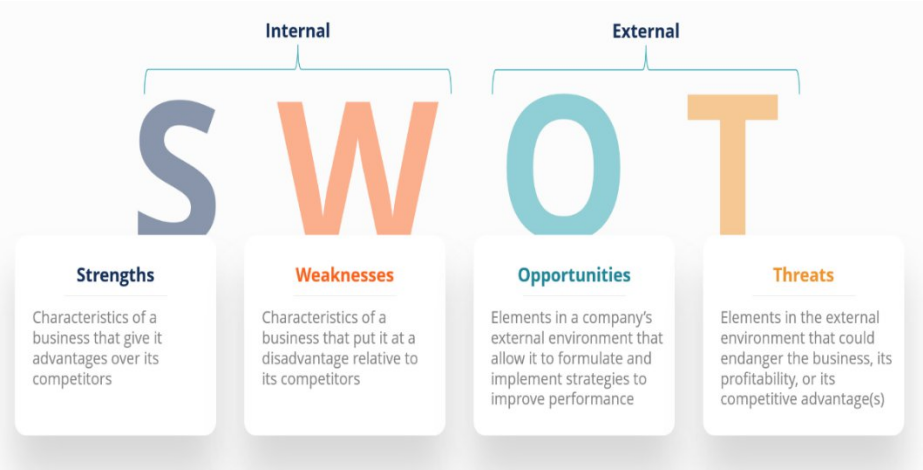

Figure-5.SWOT analysis

Porter's Five Forces Analysis

The competitive forces shaping the hospital supply chain industry in India can be analyzed as follows:

- **Supplier Power:** High in the case of implants and branded pharmaceuticals, as a few multinational companies dominate; moderate in generic consumables due to multiple sourcing options.
- **Buyer Power:** Rising due to insurance companies and government schemes imposing strict reimbursement packages, compelling hospitals to negotiate aggressively with suppliers.
- **Industry Rivalry:** Strong competition exists among corporate hospital chains, regional hospitals, and specialty centers, where cost efficiency and patient outcomes are critical differentiators.
- **Threat of Substitutes:** Moderate, with ambulatory centers, day-care units, and telemedicine offering alternative models for less complex care.
- **Threat of New Entrants:** Moderate, as new specialty clinics and diagnostic centers adopt leaner operating models, though large hospitals remain capital-intensive ventures.

Figure-6.Porter's five force model

CHAPTER-3

Competitor Analysis

Competitor analysis, also called competitive analysis and competition analysis, is the process of examine similar brands in your industry to gain insight into their offerings, branding, sales and marketing approaches. Knowing your competitors in business analysis is important if you're a business owner, marketer, start-up founder, or product developer. A competitor analysis offers several benefits, including:

Understanding industry standards so that you can meet and exceed them

- Discovering untapped niche markets
- Differentiating products and services
- Fulfilling customers' desires and solving their problems better than competitors
- Distinguishing your brand Ø Standing out in your marketing
- Measuring your growth

The main competitors of Sparsh Hospitals are,

- Apollo Hospital
- KIMS Hospital
- AMRI Hospital
- CARE Hospital
- SUM Hospital

The above sections provide a competitor analysis frame work for evaluating your industry's competitive landscape. Return to this framework regularly and apply insights to developing your business. By reviewing any notes, plans or other business development legwork you have completed and ground yourself in your business values, goals, branding, products and services. That way, we can easily identify existing brands that target customers might choose over brand.

Apollo Hospital:

Apollo Hospital is a renowned chain of hospitals known for its comprehensive healthcare services across India. It boasts of state-of-the-art medical infrastructure, cutting-edge technology, and a wide range of specialties including cardiac care, oncology, neurology, and organ transplants. Apollo's strong brand reputation and extensive network give it a significant advantage in terms of patient trust and accessibility. However, its premium pricing might pose a challenge in competing with more localized hospitals like Ashwini in certain market segments.

KIMS Hospital:

KIMS Hospital, another prominent player, focuses on providing high-quality healthcare services with a strong emphasis on affordability and accessibility. It is known for its specialization in areas such as Orthopedics, Nephrology, and Oncology.It attracts patients seeking quality care at relatively lower costs compared to premium hospitals like Apollo. However, its market penetration and brand recognition might vary depending on the region compared to a localized competitor like Sparsh.

MANIPAL HOSPITAL:

Ranked among Odisha's premier healthcare institutions, AMRI Hospitals Bhubaneswar offers tertiary-level clinical care supported by a diverse team of skilled doctors, well- trained nurses, and paramedical

professionals. With state-of-the-art equipment and modern facilities, the hospital brings high-quality medical care closer to the people of Odisha, sparing them the need to seek treatment in other parts of the country.

CARE Hospital:

CARE Hospitals is a multi-super speciality hospital offering a wide variety of medical services including Cardiac Sciences, Neuro Sciences, Renal Sciences, Medical and Surgical Gastroenterology and Orthopedics, as well as high-end Critical Care and Emergency medicine and all major specialties. also provides the facility of health packages. These packages are meant to provide better healthcare facilities at a reasonable cost to the citizens of the country.

SUM Ultimate:

Sum ultimate Medicare is a one-stop, multi-super specialty quaternary care hospital committed to providing medical excellence across with spectrum of medical and surgical interventions, along with a comprehensive mix of follow-up services. The state-of-the-art healthcare facility provides an ecosystem of healing with high-quality care and integrates a wide spectrum of clinical education and research opportunities.

Chapter- 4

Customer Analysis

Customer is defined as “someone who buys goods or services from a business”.

To date, no uniformly agreed on definition of healthcare customer has emerged, but the previous definition could apply to a patient. Popular insurance plan options, such as high-deductible plans and health savings accounts, have led to rapid growth in consumer-driven healthcare, where consumer is generally accepted to mean customer. With the advent of these and other products in the healthcare marketplace, individuals are motivated to shop for providers on the basis of price and quality information that is publicly available, which may be influencing the shift in labeling from patient to customer. Importantly, the use of the term customer has long depended on the person or organization using the term. For instance, healthcare administrators might refer to customers rather than patients when negotiating privileges with physician groups.

Administrators might refer to insurance providers as customers, as insurers often influence where patients seek treatment. The purpose of this case study was to identify a hospital’s customers, as viewed by both patients and healthcare team members, and to identify variables that lead to customer satisfaction. The study was conducted at one acute care. The study’s findings may be of interest to hospital administrators who wish to incorporate customer service techniques to build customer relationships. It also offers a method to identify potential customer segments and the attributes those segments deem important to making the decision to do business with the hospital. Ultimately, this case study provides a framework in which to identify a hospital’s customers and the best ways to attract and retain them.

Is patient a customer?

A patient is viewed as an individual who grants authority to the physician, whereby the physician is presumed to be the sole decision maker regarding the services provided. Conversely, customer is defined as ―someone who buys goods or services from a businessǁ, implying that medical services are commodities to be managed in the market. When an individual is a customer, he or she purchases services and is fully responsible for checking the quality of the goods before the purchase is made. If the patient is labeled a customer, the provider assumes the role of seller, whose aim is to satisfy the customer’s needs. Switching the labels alters the nature of the relationships between healthcare practitioners and their clients/patients. If the patient label is used, the provider has the ultimate decision-making authority, whereas if the customer label is used, the receiver of care may dominate the

negotiations regarding the treatment plan. Evidence from other countries suggests that patients prefer to be called patients and not customers.

The number of studies that collectively polled 2,165 people in four different countries (UK, Poland, Canada, and Australia) the overwhelming majority of people appeared to 61_5_Mazurenko_JHM prefers the term patient, whereas only 1 in 33 people chose to be Called service user. Importantly, the patient's preference for the label may be different in United States, where the healthcare system is not a single-payer system. As patients increase their health literacy and control over healthcare decisions, they are transitioning from their roles as pure patients to roles more closely resembling customers. It is therefore useful to review how customer satisfaction has been studied in the healthcare literature.

Customer Satisfaction in Healthcare one commonly used marketing research tool to assess customer satisfaction is the SERVQUAL model. This instrument, in its original form, is used to explore the gaps between expectations and actual perceptions of a service provider's performance. Proposed that customer expectations are an important antecedent to customer satisfaction in a healthcare setting. Therefore, if customer satisfaction is the goal, a service provider must first identify the customer and then work to understand the customer's expectations of the clinical encounter. Often, these expectations are not congruent with the service provider's assumptions. Incorrectly or inadequately identifying who the customer is and what his or her expectations are can lead to inefficient resource allocation, thereby satisfying assumed expectations at the cost of not meeting actual ones.

Customers of food canteen

The clientele of the hospital's food canteen comprises a diverse spectrum of individuals, encompassing patients and their caregivers, hospital staff, including doctors and nurses, as well as members of the general public. This varied demographic represents a broad cross- section of the hospital community, each with distinct dietary preferences, nutritional requirements, and expectations regarding food quality and service. Understanding and catering to these diverse needs is crucial for optimizing the canteen's offerings and enhancing overall satisfaction among its clientele.

Do hospitals have other customers?

Historically, hospitals have developed physician incentives, such as offering hospital-based positions, managerial roles, or ownership interests, to influence physicians' decisions on where to admit their patients. Research has identified physicians' preferences for particular hospital attributes when selecting a facility for their patients, such as the distance to the hospital from the physician's office or the percentage of the physician's admissions at the hospital. Evidence suggests that the hospital– physician collaboration is nevertheless often suboptimal, characterized by strong disagreements on costs or quality issues. One reason for a lack of alignment between hospitals and physicians may be that hospitals do not understand the physicians' true expectations. The hospital is also often chosen for the patient by the insurance company. Therefore, it seems rational to view all parties— physicians, insurers, and other stakeholders as well as patients—through the lens of their role as customers who provide business for the hospital. Physicians as Customers Industry experts consistently stress that hospitals should treat their physicians as a primary customer to ensure the sustainability of the hospital. Hospital attributes typically identified as important to satisfying physicians include outcome-oriented standards; protocols for communication between physician and hospital staff, particularly in terms of manners and courtesy; scheduling that accommodates the physician's needs; appointment of a primary team with whom the physician works on a regular basis; and a facility that is ready for the physician's arrival to maximize efficiency.

Types of Customers in the Hospital Industry:

Individual Patients

Individual patients form a significant customer group in the hospital sector. They seek medical attention for various conditions, ranging from routine check-ups to complex surgeries. Meeting their healthcare needs requires patient-centric care, excellent communication, and a compassionate approach.

Health Insurance Companies

Health insurance companies play a vital role in the hospital sector as customers. Hospitals need to collaborate closely with insurance providers to ensure seamless claims processing, accurate billing, and timely reimbursement. Establishing strong partnerships with insurance companies is integral for financial sustainability in healthcare.

Government

The government is a significant customer in the hospital sector, particularly in countries with public healthcare systems. Public hospitals rely on government funding and contracts to serve the population. The government plays a critical role in healthcare policy-making, regulation, and overall healthcare system management.

Corporate Customers

The hospital sector also caters to the needs of corporate customers. From employee wellness programs to occupational health services, hospitals offer a range of services to support the health and well-being of the workforce. Collaborating with corporations can create mutually beneficial partnerships for employee healthcare.

TYPES OF PATIENTS

The self -diagnose:

You know this patient. This is the one who is convinced they've contracted a rare disease. If a diagnosis was really that easy, then medical professionals would be out of the job. Thankfully physicians are there to field the questions and help correct the diagnoses when they go a little overboard. This patient is sure they have something rare, trendy and difficult to treat. They are often disappointed when they don't have multiple specialists asking them insightful questions they've already prepared answers.

The one with over bearing family:

Here's another one you're likely to see. You know the drill walking into a patient's room chock full of visiting family members. All eyes shift to you. In an instant they bombard you with a litany of questions. Or they try to speak for their fully capable family member in a misguided attempt at showing they care. These patients are typically sweet and laid back, unlike everyone related to them. Often, family members ignored them until they got really sick and are now trying to make up for it at your expense.

The one you get attached to:

- You've been told not to get attached to your patients, but the head and the heart don't always agree.
- You'll likely find yourself remembering special patients long after they're gone. Whether it was their optimistic outlook, or the way you bonded before a big surgery, some patients occupy a special place in your heart.

The skeptic:

- These incredulous patients are always looking for a second opinion. They may come into their appointment with medical knowledge after a little online research.
- However, this patient is hesitant to accept any of your explanations or advice, questioning your every move.
- Sometimes you can't blame them—if they've been from doctor to doctor only to be hurried through the system and placed on some drug that works on most people.

The one that never goes to doctor:

You know this patient—They're rarely happy to see doctors and think their time would be better spent elsewhere: Running errands, finishing that project at home or a million other excuses. And they can't remember the last time they had an appointment for a checkup.

The Indolent

You know this patient-these are individuals who do not take much interest in describing their ailments because of the following reasons –lack of interest or laziness, not to trouble others by his complaints, false modesty etc.

Hypochondriacs and hypersensitive patients:

Hypochondriac patients imagine complaints because of their nervousness and morbid fear, whereas the hypersensitive patients intensify the symptoms because they want prompt relief.

CHAPTER-5

Actual work done, Analysis & Finding

FEEDBACK FORM

By filling the feedback form I got,

- **Improving Services**: Feedback forms provide valuable insights into the patient experience. Hospitals and clinics use this feedback to improve the quality of care they provide. This could include anything from improving waiting times to enhancing the communication skills of staff.

- **Patient Satisfaction**: By giving feedback, patients contribute to their own satisfaction levels. Knowing that their opinions matter can improve trust and patient-provider relationships.

- **Quality Assurance**: Healthcare institutions use feedback forms as part of their quality assurance processes. They help identify areas that need improvement and monitor changes over time.

- **Policy and Decision Making**: Feedback forms can influence policy decisions within healthcare organizations. For instance, if there are consistent complaints or suggestions regarding a particular aspect of service, it may prompt management to make changes.

- **Professional Development**: Feedback can also be used for training and professional development purposes. Healthcare professionals can learn from patient feedback to enhance their skills and approach to patient care.

ANALYSIS AND FINDING

The analysis of supply chain management at Sparsh Hospital, Sahidnagar has provided valuable insights into its operational strengths and weaknesses. The study highlighted several critical gaps that affect efficiency, cost control, and service delivery.

1. Inventory Imbalance – Inventory management is still partly manual, which results in stockouts of fast-moving drugs and overstocking of slow-moving items. This imbalance not only disrupts patient care but also leads to financial losses due to expired medicines.

2. Procurement Delays – The procurement process is largely department-wise and paper-based, leading to longer approval cycles and delays in the purchase of essential items. This reduces responsiveness, especially during emergencies.
3. Vendor Dependency – The hospital relies heavily on a limited vendor base, which increases the risk of delayed supplies and creates vulnerability in the supply chain. Moreover, no structured vendor evaluation system is in place to measure supplier performance.
4. Weak Coordination – Coordination among procurement, pharmacy, finance, and clinical departments is not fully streamlined. This sometimes results in duplicate or delayed orders, affecting operational efficiency.
5. Lack of Automation – Absence of a modern ERP or digital inventory system limits real-time visibility of stock, expiry alerts, and demand forecasting. This makes reporting and compliance time-consuming.
6. Wastage and Expiry Issues – Medicines and consumables near expiry are not systematically monitored or disposed of, resulting in avoidable wastage and compliance concerns.
7. Documentation Burden – Though compliance records are maintained, the manual nature of documentation makes it cumbersome and less audit-ready, compared to modern automated practices.

Overall finding:

While Sparsh Hospital has a functional supply chain supporting daily operations, it is still heavily dependent on manual systems, limited vendors, and fragmented processes. These factors lead to higher costs, delays, and wastage, which can directly impact patient care.

However, with the adoption of digital tools, centralized procurement, structured vendor management, and waste control mechanisms, the hospital can transform its supply chain into a more efficient, cost-effective, and patient-focused system.

Area of Study	**Analysis**	**Findings**
Inventory	Inventory is partly manual, leading to	Stockouts of fast-moving drugs and

Area of Study	Analysis	Findings
Management	delays in tracking and poor stock visibility.	overstocking/expiry of slow-moving items.
Procurement Process	Department-wise and paper-based system increases cycle time and reduces efficiency.	Procurement delays and higher costs due to lack of bulk buying.
Vendor Management	Limited number of vendors with no structured performance monitoring.	Dependency risk and frequent delays in supply deliveries.
Department Coordination	Communication between pharmacy, procurement, finance, and clinical units is weak.	Duplicate or delayed orders affecting smooth hospital operations.
Technology Adoption	Absence of ERP or automated inventory system.	No real-time stock visibility, expiry alerts, or demand forecasting.
Waste & Expiry Control	No systematic monitoring or disposal of near-expiry/expired items.	Avoidable wastage, financial losses, and compliance concerns.
Documentation	Compliance records maintained manually, requiring more effort.	Reporting is time-consuming and less audit-ready.

CHAPTER-VI

Suggestion

Based on the analysis and findings, the following recommendations are suggested to strengthen the supply chain management practices at Sparsh Hospital :

1. **Adoption of ERP System** – Implementing a hospital-wide ERP or inventory management software will enable real-time tracking of stock levels, generate expiry alerts, and reduce dependency on manual processes. This will improve accuracy and efficiency.

2. **Centralized Procurement** – Shifting from department-wise purchasing to a centralized procurement system will enhance negotiation power, reduce overall costs, and enable bulk purchase benefits.

3. **Vendor Diversification and Evaluation** – Reducing dependency on a limited number of vendors by building a diverse vendor base will minimize risks of delay and disruption. A structured vendor evaluation framework based on quality, timeliness, and pricing should be introduced.

4. **Streamlining Approval Processes** – Introducing digital approvals instead of paper-based systems can help reduce lead time, especially for critical items, and improve responsiveness during emergencies.

5. **Improved Inter-Departmental Coordination** – Regular coordination meetings and digital communication channels between procurement, pharmacy, finance, and clinical units should be established to avoid duplicate or delayed orders.

6. **Waste Management and Expiry Control** – A systematic process should be developed for the return or disposal of expired items. Automated alerts for near-expiry medicines can reduce wastage and financial losses.

7. **Training and Capacity Building** – Regular training for staff on supply chain best practices, use of digital systems, and vendor management will improve efficiency and accountability.

8. **Benchmarking with Best Practices** – The hospital should benchmark its SCM process against other leading healthcare institutions to adopt best practices like Just-in-Time (JIT) supply, automated reporting, and demand forecasting.

Conclusion

In conclusion, Hospital Supply Chain Management is a vital function that ensures the smooth flow of medicines, medical equipment, and essential services, directly influencing patient care and hospital performance. An efficient supply chain minimizes delays, reduces operational costs, prevents wastage, and improves coordination across departments. In the present healthcare environment, where patient satisfaction and cost optimization are equally important, a robust supply chain system becomes a strategic necessity rather than just a support activity. By adopting technology, data-driven practices, and sustainable methods, hospitals can enhance efficiency, deliver timely care, and achieve long-term sustainability.

In today's competitive and technology-driven environment, hospitals must embrace digital tools such as ERP systems, automation, and data analytics to strengthen their supply chains. Furthermore, sustainable practices like green procurement and waste reduction are becoming increasingly important in aligning healthcare operations with global environmental goals. Therefore, hospital SCM is no longer limited to operational support; it is a strategic function that drives efficiency, quality, and long-term sustainability. A well-optimized supply chain ensures not only cost-effectiveness but also patient satisfaction, which is the ultimate goal of any healthcare institution. Chopra, S., & Meindl, P. (2021). *Supply Chain Management: Strategy, Planning, and Operation* (8th ed.). Pearson Education.

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