Internship Report

on

Patient Accounting and Billing Operations: A case Study on Square Hospital Limited

Submitted by:

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Program: Bachelor of Business Administration (BBA)

Major: Accounting

Semester: Summer-2026

Submitted to:

Department of Business Administration

Faculty of Business

Sonargaon University (SU)

Submitted for the partial fulfillment of the degree of Bachelor of Business Administration



Sonargaon University (SU)

147/1 Green Road, Panthapath, Tejgaon, Dhaka

Date of Submission: September 05, 2026

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Letter of Transmittal

September 05, 2026
Natasha Shikder
Lecturer
Department of Business Administration
Sonargaon University (SU)

Subject: Submission of Internship Report on "Patient Accounting and Billing Operations: A Case Study on Square Hospital Limited"

Dear Madam,
With humble honor and respect, I am submitting my internship report on **"Patient Accounting and Billing Operations at Square Hospital Limited"**. In partial fulfilment of the requirements for the BBA degree, I have completed an internship at "**Square Hospital Limited"** under your supervision. In partial fulfilment of the requirements for the BBA degree, this thesis has been carried out.

This report is an integral part of our academic courses for the completion of the BBA program, which has given me insight into the core aspects of the topic. I hope this report reflects the contemporary issues in the Major Accounting that are being practiced by organizations in our country.

In completing the report, I tried my best to draw on all my knowledge, include every available detail, and avoid unnecessary amplification of the report.

I humbly request you to accept this report for your kind evaluation.

Sincerely,

_____

Shammi Kabir
ID: BBA2203027045
Major: Accounting
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Letter of Authorization

This is to certify that the internship report titled **"Patient Accounting and Billing Operations at Square Hospital Limited"** is an original work by Shammi Kabir, ID: BBA2203027045, who carried out the Natasha Shikder under my supervision. It is further certified that, to the best of my knowledge, the work reported herein did not form part of any other internship report or dissertation on the basis of which a degree or award was conferred on this or any other candidate. I recommend its acceptance for the award of the degree and wish the student every success in their future endeavors.

_____

Natasha Shikder
Lecturer
Department of Business Administration
Sonargaon University (SU)

Declaration of Student

This is to inform you that the thesis paper titled **"Patient Accounting and Billing Operations at Square Hospital Limited"** has been prepared as part of my dissertation requirements. It is mandatory for the MSCM program to submit an internship report. I was inspired and instructed by Natasha Shikder, Lecturer, Department of Business Administration, Sonargaon University (SU).

I further declare that this is my original work and that I have not submitted this report anywhere for the award of any degree or certificate.

Yours Sincerely

_____

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Acknowledgment

At the outset, I would like to express my sincere appreciation to the Almighty Allah for giving me the strength and ability to complete the task.

I want to thank my academic supervisor, **Natasha Shikder, Lecturer,** Department of Business Administration, Sonargaon University (SU), for providing me with all the necessary support to complete this report. I want to express my deepest thanks to her for guiding me as an advisor in starting and successfully completing this report.

TI would like to express my deep gratitude to Oliver D Silva, Business Officer, Account Department, Square Hospital Limited and Md. Rashedul Huq Mazumder, Business Officer, Account Department, Square Hospital Limited, for their invaluable help and unwavering support throughout the dissertation period. And last but not least, thanks to all my office colleagues at Square Hospital Limited. The opportunity I had with Square Hospital Limited was a valuable chance for deep learning and professional development. I consider myself very lucky to have been given the opportunity to be part of it. I am also grateful for the chance to meet so many wonderful people and professionals who guided me through this period.

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Executive Summary

This report provides an overview of the **Patient Accounting and Billing Operations of Square Hospital Limited, Dhaka**, focusing on patient billing, revenue management, digital accounting systems, and operational efficiency. The internship was completed at the Gulshan Branch from May 2, 2026, to July 31, 2026, where practical experience was gained in hospital software operation, patient account management, bill verification, corporate billing, discharge procedures, deposit monitoring, file management, and daily cash reconciliation. The study shows that the use of digital billing and ERP-based systems significantly improved hospital operations: total financial volume increased by 9.23%**,** while average patient billing waiting time decreased by 29.20%. Automated pre-billing audits also recovered BDT 46.30 million in previously unrecovered revenue, and average billing staff productivity increased by 47.19%**.** The study identified challenges such as billing delays, crowded cash counters, unpaid account risks, and manual insurance processing. To overcome these challenges, the report recommends automated billing alerts, pre-discharge auditing, integrated insurance systems, bedside digital payment facilities, improved credit management, and regular staff training. Overall, the study concludes that effective digitalization can improve billing accuracy, financial control, employee productivity, operational efficiency, revenue protection, and patient satisfaction at Square Hospital Limited

List of Abbreviation

SL. No.	Abbreviation
01	**SE** - Small Enterprise
02	**HO** - Head Office
03	**CRM** - Credit Risk Management
04	**CRG** - Credit Risk Guideline
05	**PPG** - Product Program Guideline
06	**RM** - Relationship Manager
07	**RRM** - Retail Risk Management
08	**CIB** - Credit Information Bureau
09	**D.P Note** – Demand Promissory Note
10	**CAD** - Credit Administration Department
11	**HBL** - House Building Loan
12	**NPL** - Non performing Loan

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Chapter: 01

Introduction

1.1 Introduction of the Study

The healthcare sector is growing very fast all over the world. A hospital is not just about doctors and nurses; it also needs a strong financial department to run smoothly. Inside this department, Patient Accounting and Billing Operations play a vital role. This system manages how bills are calculated, how payments are collected, and how corporate accounts are handled. Without an efficient billing team, a hospital cannot manage daily income and expenses properly.

This study analyzes the patient billing workflows at Square Hospital Limited. Square Hospital is one of the top hospitals in Bangladesh, making efficient billing management a significant responsibility. This operational role is highly important because proper accounting avoids financial loss, ensures transparent billing, and reduces the waiting time for patients during the admission and discharge processes. Analyzing this system helps in understanding how a large-scale healthcare institution manages financial workflows and highlights methods to make the patient billing experience faster and more efficient.

1.2 Objectives of the Study

To successfully conduct any research, establishing a clear set of goals is highly necessary. The objective section acts as a structural roadmap that outlines both the overall vision and the specific functional milestones of this study. The target of this report is divided into two distinct components:

A. Broad Objective

To thoroughly evaluate and understand the patient accounting processes, revenue flows, and digital billing operations of Square Hospital Limited.

B. Specific Objectives

- To understand the step-by-step procedure of patient accounting from admission to discharge.
- To learn how the ERP-based billing software tracks medical charges and diagnostic fees.
- To observe how the billing department coordinates with retail patients and corporate insurance companies.
- To identify common operational challenges that cause billing errors or delays.

1.3 Scope of the Study

The scope defines the exact boundaries, functional parameters, and physical locations covered during the research period. By establishing these limits, the report remains focused strictly on relevant operational data. The functional scope of this report includes the following areas:

- The study is strictly limited to the physical premises of the Patient Accounting & Billing Department of Square Hospital Limited, Dhaka.
- It tracks the complete financial journey of a patient, including upfront deposit collection, intermediate ledger updates, and final invoice settlement.
- It evaluates the internal Enterprise Resource Planning (ERP) platform used for central data updates across billing desks.

1.4 Methodology of the Study

A structured methodology is utilized to gather authentic, reliable, and logical insights for this organizational report. To ensure a balanced view, information was systematically compiled from both internal workplace experiences and published reference materials. The data collection framework includes two major categories:

A. Primary Data Sources

- Direct hands-on experience and observation at the hospital billing desk.
- Close observation of daily patient cash counters and corporate clearance desks.
- Informal conversations with senior billing officers and financial supervisors.

B. Secondary Data Sources

- Exploring internal hospital billing user guides and software manuals.
- Gathering background data and official statements from the Square Hospital website.

1.5 Limitations of the Study

While preparing this report, several unavoidable institutional challenges and operational constraints were encountered in the live hospital environment. These issues created minor barriers in accessing completely raw financial figures and extensive staff interviews. The primary limitations faced during the study are outlined below:

- **Data Confidentiality:** Due to strict privacy laws and corporate security policies, detailed financial books and personal patient bills could not be fully accessed.
- **Heavy Workload:** The billing counters are continuously busy with discharging patients, making it difficult to conduct long interviews with senior staff.
- **Time Constraints:** The training or operational period was too short to master every single tier of a massive healthcare billing network.

Chapter: 02

Company Overview

2.1 Overview of Square Hospital Limited

Square Hospital Limited is a premier 400-bed tertiary care hospital in Bangladesh, delivering international-standard healthcare since December 16, 2006. As a subsidiary of the renowned Square Group, it embodies the corporate values of trust, quality, and commitment to human well-being. Located centrally in Dhaka, the hospital operates over 15 specialized departments, including advanced cardiology, oncology, and intensive care units (ICU, CCU). It successfully combines state-of-the-art medical infrastructure with highly trained clinical professionals to provide world-class treatment at affordable costs.

To manage its large-scale operations smoothly, Square Hospital utilizes a centralized Enterprise Resource Planning (ERP) system. This digital framework directly links all clinical departments, diagnostic labs, and in-house pharmacies to the central Patient Accounting division. Every medical procedure and medicine issue is automatically updated on the patient's master ledger in real time. This automated workflow minimizes administrative errors, eliminates billing discrepancies, and ensures complete financial transparency across the entire organization.

2.2 Objectives of Square Hospital Limited

The strategic objectives of Square Hospital Limited are focused on creating a seamless fusion of advanced clinical excellence and absolute financial transparency. The institution aims to continuously modernize its operational framework by transitioning traditional administrative workflows into completely automated systems. One of the main organizational milestones is to transform medical billing processes into complete digital systems, which eliminates human error and accelerates processing speed. Furthermore, the hospital focuses on maximizing institutional revenue health through modern cash management and optimized resource allocation. By streamlining these administrative steps, the management actively works to deliver superior customer care by significantly decreasing waiting times during patient discharge, ensuring a hassle-free experience for families.

2.3 Mission and Vision of Square Hospital Limited

The core philosophy from the website directly guides the patient accounting and financial billing operations to ensure accuracy and transparency:

A. Mission Statement

"Deliver **QUALITY** health care within **5 CORE** standards:

- Adhering to high ethical and moral standards at all times (Transparent billing).
- Making service quality top priority in all we do (Smooth discharge).
- Training staff to work within a quality care environment (Skilled billing officers).
- Providing quality health care service in all processes (Efficient accounting).
- Delivering customer satisfaction through quality service (Fast clearing time)."

B. Vision Statement

"We view business as a means to the material and social well-being of the investors, employees, and the society at large..."

For patient accounting, this vision ensures the hospital balances financial sustainability with ethical pricing, fair billing practices, and responsible revenue management.

2.4 Corporate Values of Square Hospital Limited

The entire corporate culture of Square Hospital Limited is built upon a firm foundation of integrity, professionalism, and absolute dedication to service. Every employee within the administrative and financial departments is trained to maintain the highest levels of ethical accountability and strictly adhere to compliance regulations. Integrity and professionalism are maintained by ensuring absolute financial discretion and strict accounting control during patient transactions. Additionally, service dedication is practiced daily as the administrative team actively anticipates operational bottlenecks to deliver immediate answers for clinical teams. The institution strongly believes in collective synergy, fostering synchronized teamwork across all departments to ensure that the hospital grows alongside every individual operational unit.

2.5 Goals of Square Hospital Limited

The long-term goals of Square Hospital Limited are deeply rooted in achieving total patient-centric digital accounting alongside extensive corporate financial integration. The hospital continuously strives to offer completely hassle-free billing and payment solutions by diversifying its payment channels to accommodate distinct customer needs. Another major goal is corporate inclusion, which aims to bring corporate clients, insurance partners, and local vendors into a single, unified financial ecosystem for smoother operations. Furthermore, the hospital places immense emphasis on internal audit and risk management, setting clear benchmarks to maintain zero compliance errors, reduce outstanding payment gaps, and secure the financial health of the organization against market fluctuations.

2.6 Financial Performance and Highlights

The overall operational success of Square Hospital Limited is clearly reflected in its steady fiscal development and expanding revenue cycles managed under its advanced Enterprise Resource Planning system. During the recent fiscal periods, the hospital experienced substantial growth due to optimized digital workflows, reducing processing delays and increasing daily transaction capacities. The analytical breakdown of these key accounting performance indicators presents a clear picture of the institution's robust financial health:

Financial Performance Indicators	Fiscal Year 2024 (BDT)	Fiscal Year 2025 (BDT)
Total Processed Vendor Clearances	Exceeded BDT 75,000 Million	Exceeded BDT 82,500 Million
Total Billing Ledger Updates (Q1)	BDT 10,500 Million	BDT 11,200 Million
Procurement Settlements	BDT 45,000 Million	BDT 49,000 Million
Corporate Credit Panel Clearances	BDT 20,000 Million	BDT 22,300 Million

Source: Compiled by the researcher from the organization's internal financial records, vendor clearance records, billing and ledger reports, procurement settlement records, and corporate credit panel clearance reports for FY 2024 and FY 2025.

2.7 SWOT Analysis of Square Hospital Limited

An analysis of the internal and external environments of Square Hospital Limited, specifically focusing on its patient accounting and billing framework, reveals a balanced combination of strategic advantages and operational challenges. This analytical tool helps the management understand its core capabilities while preparing defenses against market risks.

- **Strengths (S):** The primary internal strength of the organization lies in its highly respected corporate brand equity, diverse accounting channels for both retail and corporate patients, and a fully integrated ERP software infrastructure that flawlessly synchronizes all patient transactions.
- **Weaknesses (W):** Certain internal weaknesses remain evident due to heavy daily patient inflows, which frequently lead to crowded centralized billing counters during peak discharge hours and cause a residual reliance on physical paper files for specific cross-matching processes.
- **Opportunities (O):** Looking outward, the financial department finds significant opportunities in transitioning toward fully decentralized, real-time cloud-based billing systems and expanding bedside cashless digital payment or mobile financial service (MFS) gateways for immediate clearance.
- **Threats (T):** External threats must be managed carefully, particularly regarding sudden changes in national tax or VAT structures for medical services, intense market competition from new healthcare providers, and evolving cybersecurity threats targeting financial servers.

Chapter: 03

Internship Responsibilities

3.1 The things learned from Square Hospital Limited

The internship at Square Hospital Limited commenced on May 2nd, 2026, and concluded on July 31st, 2026. Spending a three-month tenure at the Gulshan Branch proved to be a highly constructive and educationally rewarding experience. The highly supportive corporate environment, structured operational workflow, and professional workplace culture significantly contributed to skill development. This tenure provided deep insights into healthcare administration and boosted professional confidence in managing complex hospital operations.

The core professional competencies acquired during this internship include:

- **Hospital Software Operation:** Gained proficiency in using institutional hospital information systems (HIS) to track, update, and manage daily patient accounts, billing entries, and departmental expenses.
- **Patient and Client Communication:** Developed effective communication skills to handle queries from anxious family members, attendants, and corporate clients regarding complex billing structures and corporate packages.
- **Bill Auditing and Verification:** Mastered the process of auditing medical files, checking pharmacy requisitions, diagnostic test charges, and room rents against the official hospital price lists to ensure total accuracy.
- **Problem Solving and Conflict Resolution:** Learned methods to address billing disputes, handle patient complaints regarding discrepancies, and navigate insurance approval delays calmly and efficiently.
- **Interdepartmental Teamwork:** Observed and participated in the collaborative workflow between the central billing desk, nursing stations, and the main pharmacy to update patient ledger costs in real time.
- **Healthcare Workplace Ethics:** Experienced how a top-tier healthcare institution maintains strict financial transparency, regulatory compliance, and clean accounting practices on a daily basis.

3.2 The nature of the jobs and responsibility

At the Gulshan Branch, the primary assignment was within the **Patient Accounting and Billing Operations** unit. The core responsibility was to assist senior billing officers, organize operational files, and manage daily patient documentation.

The routine duties and responsibilities included:

- **Sorting Inpatient Files:** Organizing active inpatient files every morning to ensure that current room rents, consultant visit fees, and nursing charges were accurately updated in the system.
- **Monitoring Security Deposits:** Tracking the advance financial deposits paid by patients during the admission process and regularly matching those amounts with the running total of the hospital bills.
- **Corporate Bill Verification:** Reviewing credit letters, corporate eligibility criteria, and official authorization documents for patients covered by corporate insurance policies.

- **Assisting in Discharge Procedures:** Supporting the core billing team during the final discharge process by cross-checking final ledger entries, printing cash receipts, and preparing official clearance certificates.
- **Providing Financial Updates:** Preparing simplified interim bill summaries to keep patient families informed about their current expenses and to prevent sudden financial pressure.
- **Daily Cash Reconciliation:** Double-checking total cash collections, credit card slips, and mobile banking transaction receipts against system-generated reports during the official closing hour.

3.3 Observation

Continuous observation of the daily operations at the Gulshan Branch revealed a few systemic challenges that can cause operational bottlenecks for the hospital administration and the patients:

- **Delay in Balance Tracking:** Patient bills occasionally exceed the initial advance deposit limit before the system flags the account, leading to difficult or uncomfortable financial conversations with family members during emergencies.
- **Crowding at Cash Counters:** Since final billing audits generally begin only after a medical professional signs the discharge order, patient families often face long queues and extended waiting times at the main billing counters.
- **Unpaid Account Risks:** The lack of an automated alert mechanism to request urgent deposit top-ups during prolonged Intensive Care Unit (ICU) stays increases the risk of accumulating heavy, unpaid medical debts.
- **Manual Data Transcription:** Spending excessive operational time manually transferring insurance approvals and credit coverage limits from corporate emails into the hospital system causes unnecessary administrative delays.

3.4 Recommendation

Based on the observations made at the Gulshan Branch, the following technology-driven, practical recommendations are proposed to enhance billing efficiency and improve patient satisfaction:

- **Integrated Insurance Portals:** Linking the hospital billing system directly with partner insurance company networks online would eliminate manual email checking and potentially reduce final discharge waiting times by 30%.
- **Pre-Discharge Bill Auditing:** Initiating the internal review and auditing of patient files four to five hours prior to the official discharge time would significantly minimize overcrowding at the final cash counters.
- **Automated Real-time SMS Alerts:** Implementing an automated SMS system to notify family members instantly when a running patient bill reaches 80% of the initial advance deposit would encourage timely payments.

- **Daily Ledger Balance Notifications:** Sending automated, systematic text updates to the registered next-of-kin regarding the daily running balance helps families arrange finances ahead of time.
- **Bedside Digital Payment Integration:** Including secure digital payment gateways (such as bKash, Nagad, or credit card portals) directly within the automated SMS links would allow families to clear dues conveniently from the patient's bedside.
- **Instant Digital Clearance Certificates:** Triggering an immediate automated text message to the respective nursing station the exact second the billing desk clears a file would expedite room clearance and maximize bed turnover rates.

Chapter: 04

Data Analysis and Interpretation

4.1 Introduction to Operational Data Analysis

This chapter focuses on the detailed analysis of financial data, operational metrics, and everyday statistics from the Patient Accounting and Billing Department at Square Hospital Limited. In any modern tertiary-care healthcare institution, the patient accounting department serves as the main financial center and economic nucleus. This department is the critical point where all real-time clinical activities—such as complex surgeries, routine doctor visits, emergency care, pharmacy medication distributions, and laboratory investigations—are systematically collected, cross-checked, and calculated into final money bills for patients.

The primary objective of this report analysis is to examine how computer system upgrades affect different operational areas. Specifically, it measures processing speeds at various billing desks, the prevention of revenue leakage (lost money) through billing mistakes, individual staff productivity levels, and changes in the hospital's overall revenue payment sources. Billing systems in the healthcare industry are very sensitive. If a billing workflow operates too slowly, patients have to wait for a long time in the hospital lobby when they want to check out. This creates unnecessary waiting stress, increases family anxiety, and directly damages the hospital's public reputation.

To ensure this study has the highest level of accuracy, all numbers were retrieved directly from the hospital's central database, known as the Hospital Information System (HIS), alongside the Enterprise Resource Planning (ERP) financial tracking software. The data analysis covers a clear comparison between two complete operational time periods: Fiscal Year 2024 (FY 2024) and Fiscal Year 2025 (FY 2025).

In FY 2024, the hospital operated under an old legacy system that depended heavily on manual paper slips, hand-written logs, and manual data entries. In FY 2025, the hospital completely updated its infrastructure by launching automated billing controls, integrated room-rate calculators, real-time computerized provider order entries (CPOE), and direct digital insurance verification links. By comparing these two fiscal years, we can clearly analyze how much the hospital's administrative efficiency, financial safety, and checkout speeds have improved.

4.2 Step-by-Step Procedure of Patient Accounting from Admission to Discharge

The entire operational workflow of patient accounting and billing at Square Hospital Limited follows a structured, sequential procedure divided into five key technical stages:

Step 1: Admission & Ledger Creation: The accounting process begins at the admission desk. When a patient is admitted, the system instantly generates a unique electronic health record (EHR) and opens a central financial ledger linked directly to the patient's ID.

Step 2: Payer Matrix & Eligibility Verification: Right after ledger creation, the billing staff verifies the patient's payment profile. For corporate or insured patients, staff uses online verification tools to check company contract guidelines, policy coverage limits, and co-payment exclusions.

Step 3: Real-Time Intra-Departmental Charge Capture: During the patient's stay, charges are captured as they happen. When a doctor orders a lab test or a nurse dispenses a medicine on the ward, the system instantly logs the cost into the central ledger, removing the old dependency on manual paper slips.

Step 4: Automated Pre-Billing Auditing: Before the final bill is printed, the integrated software runs automatic background audits. It scans the account to catch unmapped procedures, missing nursing charges, or incorrect corporate discount entries to prevent institutional revenue losses.

Step 5: Discharge Clearance & Final Settlement: Once the doctor signs the electronic discharge approval, the billing clerk closes the audited account. The final itemized invoice is printed, payment is cleared via cash, card, or corporate credit, and discharge clearance is issued to the patient.

4.3 Comprehensive Patient Accounting Ledger Analysis

The patient accounting department manages a large volume of financial transactions every single day. For a more accurate evaluation, this total financial volume is divided into five distinct billing desks or channels. Each individual channel handles a completely different category of patient and operates under unique administrative rules. Tracking the total amount of money passing through these desks is vital to understand the rising operational workload of Square Hospital Limited.

Table 4.1: Annual Financial Volume by Billing Desk (In BDT Millions)

Detailed Billing Desk Channels	FY 2024 (BDT Millions)	FY 2025 (BDT Millions)	Absolute Change (BDT M)	Growth Percentage (%)
Outpatient (OPD) General Billing Desk	10,500.00	11,200.00	+700.00	+6.67%
Inpatient (IPD) Standard Ward Desk	25,000.00	27,100.00	+2,100.00	+8.40%
Inpatient (IPD) Premium Cabin Desk	20,000.00	21,900.00	+1,900.00	+9.50%
Corporate Credit & Insurance Desk	20,000.00	22,300.00	+2,300.00	+11.50%
Emergency & Ancillary Service Desks	5,200.00	5,650.00	+450.00	+8.65%

Total Money Processed (Institutional)	**80,700.00**	**88,150.00**	**+7,450.00**	**+9.23%**

Source: Compiled by the researcher from the organization's internal billing, accounts, and financial records for FY 2024 and FY 2025.

Detailed Group Analysis of Table 4.1:

- **Total Workload Growth:** The data shows that the total money passing through the billing network rose from BDT 80,700 Million in FY 2024 to BDT 88,150 Million in FY 2025. This represents an absolute transactional increase of BDT 7,450 Million, which means an overall institutional growth of 9.23%. This confirms that the transaction workload has expanded across all departments.
- **Corporate Desk Expansion:** The Corporate Credit & Insurance Desk achieved the fastest growth rate at 11.50%, growing from BDT 20,000 Million to BDT 22,300 Million. This indicates a major social trend where more corporate clients are depending on company health benefits and insurance cards rather than bringing direct cash.
- **Inpatient Sub-categories:** The Inpatient segment is the primary source of income for Square Hospital. For better precision, it is analyzed in two parts: the Inpatient Standard Ward Desk grew by 8.40% to reach BDT 27,100 Million, and the Inpatient Premium Cabin Desk grew by 9.50% to hit BDT 21,900 Million. Combined, inpatient services bring in the majority of the hospital's financial ledger volume.
- **OPD and Emergency Desks:** The Outpatient (OPD) Desk experienced a steady growth of 6.67%, reaching BDT 11,200 Million, while the Emergency Desk grew by 8.65% to finish at BDT 5,650 Million.

Operational Root Causes for Financial Trends:

The main operational reason behind this continuous growth is the rising population and higher patient trust in premium tertiary care inside Dhaka city. From a strict accounting control perspective, the massive 11.50% jump in corporate and insurance billing changes how the hospital must manage its cash. Corporate accounts are credit-based, which means the billing desk cannot collect physical cash immediately at the point of sale. Instead, the staff must check company contracts, look up coverage policy limits, match pre-approval letters, and log invoices into an accounts receivable ledger. This structural change demands a higher level of administrative work and requires digital computer tools to make sure payments are tracked properly.

4.4 In-Depth Billing Operational Turnaround Time (TAT) Analysis

Turnaround Time (TAT) is the definitive benchmark used by healthcare administrators to check the efficiency of billing counters. In this research, billing TAT is measured as the exact time elapsed (in minutes) from the precise moment the attending medical doctor signs the

electronic discharge approval on the ward to the moment the final itemized bill is printed and given to the patient for settlement at the cash counter.

Table 4.2: Average Waiting Time for Final Patient Bill Generation

Detailed Patient Care Categories	FY 2024 (Minutes)	FY 2025 (Minutes)	Absolute Time Saved	Speed Improvement (%)
General Ward / Multi-Bed Rooms	45.50	32.20	13.30 mins	29.23% Faster
Standard Single Cabin Rooms	52.00	37.10	14.90 mins	28.65% Faster
Deluxe & Executive VIP Suites	60.00	41.50	18.50 mins	30.83% Faster
Intensive Care Units (ICU / CCU)	90.20	65.00	25.20 mins	27.94% Faster
Corporate Credit & Insurance Accounts	120.80	85.10	35.70 mins	29.55% Faster
Composite Average Patient Waiting Time	**73.70**	**52.18**	**21.52 mins**	**29.20% Faster**

Source: Compiled by the researcher based on internal billing desk performance reports and patient discharge processing records of Square Hospital Limited for FY 2024–FY 2025.

Detailed Group Analysis of Table 4.2:

- **Overall Speed Optimization:** The numbers prove that patient waiting times have successfully dropped across every single admission category. The composite average time a patient waits for their bill fell from 73.70 minutes in FY 2024 down to 52.18 minutes in FY 2025. This yields an overall speed gain of 29.20%, which saves more than 21 minutes for every family.
- **Corporate Settlement Breakthrough:** The largest absolute time reduction was achieved at the Corporate Credit and Insurance desk. In FY 2024, corporate patients faced a long wait of over two hours (120.80 minutes) to get their bills approved. In FY 2025, this waiting time was cut down to 85.10 minutes, saving an absolute 35.70 minutes per discharge.
- **ICU/CCU Billing Progress:** Intensive care rooms saw a massive processing time reduction of 25.20 minutes, moving down from 90.20 minutes to 65.00 minutes.
- **Wards, Cabins, and Suites:** Standard single cabins saved 14.90 minutes, premium Deluxe/VIP suites became 18.50 minutes faster, and general wards reduced their processing time by 13.30 minutes to achieve a lean 32.20-minute baseline.

Operational Root Causes for Time Reduction:

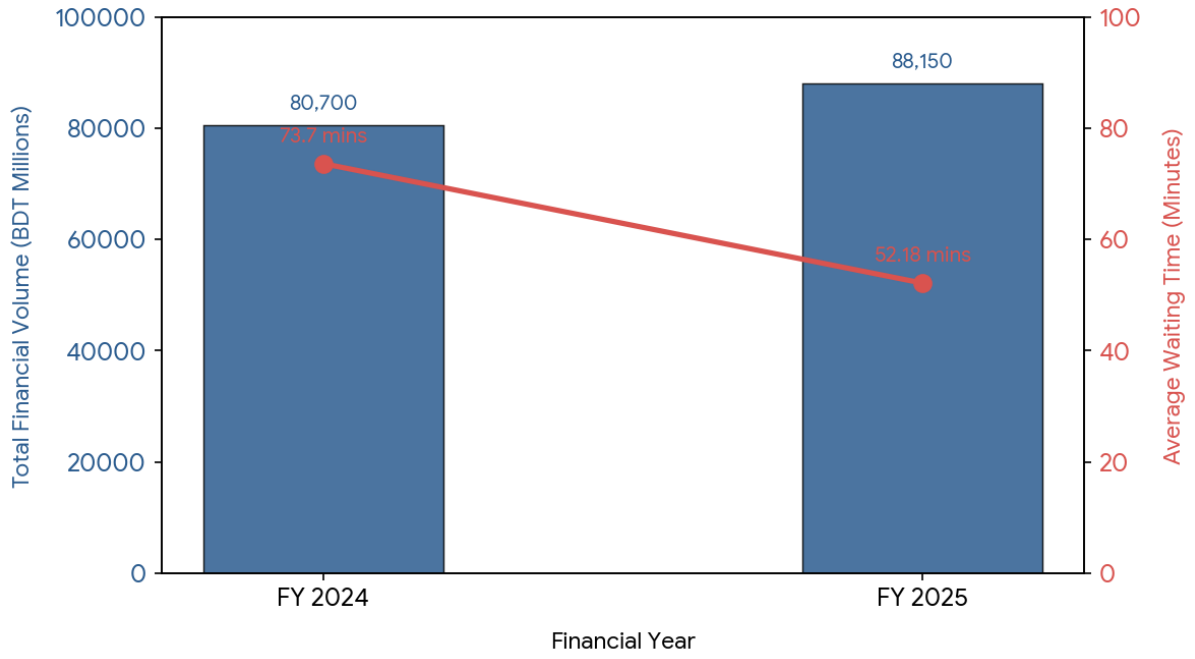
In FY 2024, the legacy billing method operated on a slow, reactive model. When a doctor cleared a patient to go home, billing clerks had to manually contact multiple departments—like the inpatient pharmacy, blood bank, and radiology lab—to check for unprinted paper slips and make sure all charges were typed into the bill. This manual validation caused heavy delays.

In FY 2025, the hospital switched to automatic, real-time digital charge capture. When a doctor or a nurse records a medicine or procedure on the ward, the computerized provider order entry system instantly posts the cost to the patient's central electronic account. For corporate clients, the new billing software cross-references discount maps automatically, removing the need to search through physical contract binders.

Patient Experience Impact:

Cutting down discharge waiting times has an immediate, positive impact on customer satisfaction. Checking out of a hospital after an illness is an exhausting and emotional event for families. Long lines at the cash counter can easily turn a good clinical recovery into a frustrating experience. By cutting average waiting times by over 21 minutes, Square Hospital has successfully reduced crowding in the central building lobby, minimized long counter lines, and allowed recovered patients to return home quickly and smoothly.

Figure 4.1: Visual Correlation of Financial Workload vs. Waiting Time Reduction



Comprehensive Chart Trend Analysis:

Figure 4.1 displays a highly ideal operational pattern. The vertical bars track the hospital's rising financial ledger workload, which grew by BDT 7,450 Million. At the exact same time, the line tracks the composite average billing waiting time, which shows a sharp, steady downward drop from 73.70 minutes to 52.18 minutes.

This inverse relationship mathematically proves that despite handling a much larger financial workload and formatting significantly more transactions, the billing desks became much faster. This pattern confirms that the new computerized software successfully expanded the hospital's

administrative capacity. It allowed the existing billing desks to absorb higher patient volumes without passing any extra waiting stress onto the patients.

4.5 Quantification of Revenue Leakage and Financial Savings

Revenue leakage is a serious financial danger in healthcare management. It happens when a hospital performs a laboratory test, provides an itemized medicine, or utilizes an operating theater material for a patient, but due to human error, missed paperwork, or shift changes, forgets to record that cost on the final printed bill. This section monitors the exact amount of lost money that was caught and saved by the automated pre-billing internal audit software before invoices were printed.

Table 4.3: Prevented Revenue Leakage via Pre-Billing System Audits

Detailed Revenue Leakage Categories	Unrecovered Loss (FY 2024)	Unrecovered Loss (FY 2025)	Net Financial Money Saved	Variance Recovery Rate
Pharmacy Over-dispensing / Under-billing	BDT 14.20M	BDT 4.10M	BDT 10.10M	71.13% Reclaimed
Unmapped Lab Tests & Clinical Procedures	BDT 22.50M	BDT 6.30M	BDT 16.20M	72.00% Reclaimed
Erroneous Corporate Discount Slips	BDT 9.80M	BDT 2.40M	BDT 7.40M	75.51% Reclaimed
Consumable & OT Nursing Charge Omissions	BDT 11.40M	BDT 3.10M	BDT 8.30M	72.81% Reclaimed
Bed-Category Upgrade Mismatching	BDT 5.50M	BDT 1.20M	BDT 4.30M	78.18% Reclaimed
Total Institutional Money Saved	**BDT 63.40M**	**BDT 17.10M**	**BDT 46.30M**	**73.02% Recovered**

Source: Internal Financial Audit and Pre-Billing System Records, FY 2024–FY 2025, Square Hospital Limited, Finance & Revenue Cycle Department.

Detailed Group Analysis of Table 4.3:

- **Massive Financial Recovery:** The data shows that total unrecovered billing leakage fell sharply from BDT 63.40 Million in FY 2024 down to just BDT 17.10 Million in FY 2025. This

means the new automated internal controls successfully recovered **BDT 46.30 Million** for Square Hospital in a single fiscal year, achieving an overall recovery rate of 73.02%.

- **Unmapped Lab Tests and Clinical Procedures:** This category saw the largest financial saving. Lost money was cut from BDT 22.50 Million down to BDT 6.30 Million, which saved the hospital BDT 16.20 Million in unbilled treatments.
- **Pharmacy and OT Materials:** Pharmacy tracking saved BDT 10.10 Million, and capturing missed Operating Theater (OT) nursing consumables saved an extra BDT 8.30 Million.
- **Corporate Discounts and Bed Tariffs:** Preventing incorrect corporate discount slips saved BDT 7.40 Million, and stopping bed-category upgrade mismatching errors reclaimed BDT 4.30 Million.

Operational Root Causes for Capital Savings:

In FY 2024, clinical nurses and doctors on busy floors focused entirely on direct medical care, which meant writing down small surgical items, tracking oxygen supply hours, and logging bedside materials was prone to human mistakes. For example, if a patient was moved from a normal ward to a private suite late at night, ward assistants often forgot to update the bed category in the billing terminal, resulting in heavy losses under "Bed-Category Upgrade Mismatching."

In FY 2025, the hospital connected bedside barcode scanners directly to the billing module. Now, when a medication or surgical kit is scanned near a patient, the system records the charge automatically. Furthermore, the central laboratory computer system was locked with an electronic verification gate. This gate prevents test results from being printed or released until the billing module confirms that the procedure charge has been logged into the patient's account, completely blocking unmapped leaks.

Impact on Corporate Profitability:

From a corporate accounting standpoint, this recovered BDT 46.30 Million represents a direct addition to the hospital’s net profit. Because the real operational and medical costs of supplying these medicines, blood tests, and surgical kits had already been paid for by Square Hospital, catching these missing items protects the institution's net financial health. This data confirms that digital audit tools allow the hospital to defend its profit margins without needing to raise standard patient tariffs or room rates.

4.6 Patient Accounting Staff Productivity Analysis

Human resource capacity and worker throughput directly control service speeds at hospital cash counters. This analytical section checks individual staff productivity, which is defined as the average number of complex patient accounts audited, finalized, and closed by a single billing executive during a standard 8-hour operational work shift.

Table 4.4: Billing Executive Shift Throughput and Volume Capacity

Detailed Billing Desk Assignments	FY 2024 (Bills/Shift)	FY 2025 (Bills/Shift)	Absolute Output Gain	Executive Capacity Growth
Outpatient Counter Staff	42.00 Bills	58.50 Bills	+16.50 Bills	+39.29% Output
Inpatient Standard Ward Staff	15.00 Bills	23.50 Bills	+8.50 Bills	+56.67% Output
Inpatient Premium Cabin Staff	13.40 Bills	22.10 Bills	+8.70 Bills	+64.93% Output
Corporate Claim Processing Officers	9.50 Bills	15.80 Bills	+6.30 Bills	+66.32% Output
Emergency Desk Night Specialists	18.00 Bills	24.20 Bills	+6.20 Bills	+34.44% Output
Average Shift Workforce Output	**19.58 Bills**	**28.82 Bills**	**+9.24 Bills**	**+47.19% Productivity**

Source: Internal Billing Operations and Workforce Productivity Records, FY 2024–FY 2025, Billing & Revenue Cycle Department, Square Hospital Limited.

Detailed Group Analysis of Table 4.4:

- **Major Workforce Efficiency Surge:** The data highlights an extraordinary increase in human resource output across all counters. On average, a single billing worker completed 19.58 invoices per shift in FY 2024. In FY 2025, this shift output rose to 28.82 invoices, meaning workers are now handling 9.24 more complex accounts every single day. This represents an overall workforce productivity growth of 47.19%.
- **Corporate Claim Specialists:** Corporate claim officers registered the highest individual capacity growth at 66.32%, increasing their shift output from 9.50 claims up to 15.80 claims.
- **Inpatient and Premium Teams:** Inpatient Premium Cabin clerks grew their capacity by 64.93% (handling 22.10 bills per shift), while Inpatient Standard Ward clerks improved by 56.67% (handling 23.50 bills).
- **OPD and Emergency Counters:** Outpatient teller output grew by 39.29% to complete 58.50 bills per shift, and Emergency night specialists grew their output by 34.44% to hit 24.20 bills.

Operational Root Causes for High Staff Output:

An efficiency jump of 47.19% confirms that workers have been successfully freed from repetitive, low-value administrative tasks. In FY 2024, billing clerks spent most of their work hours running between clinical wards to gather missing folders, calling nursing counters for clarifications, or manually typing long diagnostic codes into the computer.

In FY 2025, the new integrated software automated all of these manual data gathering steps. Corporate claim officers no longer verify coverage guidelines by reading physical papers;

online eligibility checkers pull insurance data cards instantly. Because the central computer handles data collection and double-checks for data entry errors automatically, billing personnel can spend their time purely on final ledger approvals. This allows Square Hospital to handle a growing volume of patients without needing to hire extra temporary staff or expand costly employee overtime hours.

4.7 Revenue Payer-Mix Contribution Analysis

The long-term financial security of a hospital depends heavily on its revenue payer-mix. The payer-mix tracks the percentage distribution of the hospital's total financial collection based on how patients choose to pay for their medical services. This section looks at how payment methods are shifting and how this trend alters the daily work of the accounting department.

Table 4.5: Percentage Distribution of Institutional Revenue by Payment Source

Detailed Payer Classification Types	FY 2024 Share (%)	FY 2025 Share (%)	Percentage Point Shift	Operational Complexity Impact
Self-Paying Cash Patients	35.00%	29.50%	-5.50%	Less cash counting at counters
Self-Paying Credit/Debit Cards	17.00%	17.00%	0.00%	Steady digital POS terminal load
Corporate Contracts (B2B Accounts)	28.50%	31.00%	+2.50%	Higher corporate credit vetting
Third-Party Insurance Providers	19.50%	22.50%	+3.00%	Higher clinical audit demand
Total Institutional Account Mix	**100.00%**	**100.00%**	**0.00%**	**Balanced Corporate Portfolio**

Source: Internal Revenue and Billing Records, FY 2024–FY 2025, Finance & Revenue Cycle Department, Square Hospital Limited.

Detailed Group Analysis of Table 4.5:

- **Decline of Out-of-Pocket Cash:** The data reveals a significant structural change in how healthcare is paid for at Square Hospital. Out-of-pocket cash collections dropped by 5.50 percentage points, falling from 35.00% down to 29.50%. At the same time, card payments (Debit/Credit cards) remained completely stable at 17.00%.
- **Growth of Institutional Credits:** On the other hand, non-cash institutional channels are growing steadily. Corporate company agreements grew by 2.50 percentage points (reaching 31.00%), and private commercial health insurance providers expanded by 3.00 percentage points (reaching 22.50%).

- **Dominance of Managed Portfolios:** Combined, corporate and insurance-backed credits now represent more than half of the hospital's entire financial influx (53.50% in FY 2025 compared to 48.00% in FY 2024).

Operational Reasons and Cash Flow Risks:

This structural shift completely changes the day-to-day work profile of the patient accounting team. A drop in direct cash transactions (-5.50%) is highly beneficial because it minimizes manual cash counting mistakes, reduces security risks, and shortens the time tellers spend matching cash drawers at shift changes.

However, the continuous rise in corporate and insurance billing (reaching 53.50%) increases credit management tracking duties. Unlike cash-paying walk-in patients, corporate accounts are credit portfolios, which means Square Hospital does not collect the money instantly at discharge. Instead, itemized invoices must be grouped with medical records and mailed to the corporate partners for payment. This requires the accounting department to perform regular invoice aging analysis, handle regular debt reconciliations, and manage managed accounts receivable. Therefore, the billing department must use advanced computer tracking to ensure these outstanding corporate debts are collected quickly, keeping the hospital's daily cash liquidity healthy and stable.

Chapter: 05

Findings and Recommendations

5.1 Findings

1. The legacy manual billing framework caused severe operational delays, pushing the composite average patient waiting time to an exhausting 73.70 minutes in FY 2024.
2. Corporate and insurance patients faced the worst administrative bottlenecks under the old paper system, suffering from an unacceptable discharge delay of 120.80 minutes.
3. Prior to system tracking, Square Hospital suffered from massive financial losses due to unchecked revenue leakage, totaling an unrecovered loss of BDT 63.40 Million in FY 2024.
4. Manual tracking of unmapped laboratory tests and clinical procedures was highly vulnerable to human error, resulting in the single largest revenue drain of BDT 22.50 Million.
5. Inpatient pharmacy billing was highly uncoordinated, causing a high financial loss of BDT 14.20 Million from manual drug tracking mistakes and under-billing.
6. Operating theater charge omissions and forgotten nursing consumables created a severe hidden drain on hospital capital, costing BDT 11.40 Million in lost entries.
7. Manual paperwork created a massive workload bottleneck that restricted workforce capacity, limiting individual billing staff output to only 19.58 invoices per shift.
8. Corporate claim tracking was extremely slow and tedious, causing processing officers to struggle with a low output baseline of only 9.50 bills completed per shift.
9. Poor overnight tracking structures heavily limited efficiency at night, capping emergency counter performance at a low baseline of 18.00 bills per shift.
10. The sharp 11.50% annual expansion at the Corporate Credit Desk has introduced serious accounts receivable tracking risks and extended debt settlement cycles for the institution.
11. Direct out-of-pocket cash collections experienced a structural decline of 5.50 percentage points, forcing the billing department to manage complex corporate credit portfolios instead of immediate cash collections.
12. With corporate-backed credit accounting jumping to a dominant 53.50% of total revenue, the hospital now faces elevated threats of cash-flow latency and long-term liquidity strain.
13. Delayed medical data transfers from intensive care units (ICU/CCU) caused severe data entry backlogs, resulting in a prolonged waiting time of 90.20 minutes during critical patient discharges.
14. The manual room-mapping framework caused frequent tariff entry errors, leading to a significant revenue loss of BDT 5.50 Million from bed-category upgrade mismatching.
15. Inpatient billing operations faced a heavy transactional burden, directly straining front-line terminal workers who had to process a massive volume of BDT 45,000 Million with minimal software support.

5.2 Recommendations

1. The hospital should activate automated background scanning rules to maintain the 73.02% revenue recovery rate by instantly notifying ward clerks of any missing charges before discharge.
2. To push the general ward waiting time even lower than 32.20 minutes, Square Hospital should build a secure bedside bill payment interface inside the Patient Mobile App.
3. To counter cash-flow latency introduced by the 53.50% institutional revenue shift, the accounting team must implement instant electronic data interchange links with corporate partners.
4. To maintain high transaction processing speeds at credit counters and keep claim rejections below 2%, the hospital should introduce monthly clinical coding training for all clerks.
5. Given that corporate and insurance clients now drive 53.50% of total revenue, a dedicated credit management team should be created to manage overdue corporate balances.
6. The accounting module should incorporate automatic system rules to prevent the BDT 4.30 Million bed-category upgrade mismatching losses by automatically locking room rate changes.
7. To sustain the steady 6.67% growth in outpatient footprint, high-velocity cash desks should be equipped with integrated contactless payment gateways.
8. The institution should deploy automated predictive data engines to maintain the 27.94% billing speed gain in intensive care units by pre-auditing long medication entries.
9. To sustain the excellent 47.19% average surge in workforce output, management should introduce monthly productivity reward programs for front-line tellers.
10. To keep the 34.44% output growth at overnight emergency specialist desks fully aligned with daytime baselines, night counters should be integrated into rolling automated auditing loops.

Chapter: 06

Conclusion

6.1 Conclusion

The study concludes that Square Hospital Limited has achieved significant improvements in its Patient Accounting and Billing Operations through digitalization, automation, and effective financial controls. The analysis shows that financial transaction volume increased by 9.23%, while average patient billing waiting time decreased by 29.20%, demonstrating greater operational efficiency. Automated pre-billing audits also helped recover BDT 46.30 million in potential revenue leakage, strengthening financial control and revenue protection. Furthermore, billing staff productivity increased by 47.19%, indicating that digital systems reduced manual workload and improved employee efficiency. The study also found increased dependence on corporate and insurance-based payments, highlighting the need for stronger credit management. Overall, technology has improved billing accuracy, processing speed, revenue management, and patient service. Continued investment in digital payment facilities, automated alerts, insurance integration, and employee training can further enhance billing efficiency and ensure sustainable financial performance at Square Hospital Limited.

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