ASSESSMENT OF TURNAROUND TIME FROM TOKEN GENERATION TO BILLING COUNTER ARRIVAL FOR OUTPATIENT CONSULTATIONS AT RUKMANI BIRLA HOSPITAL, JAIPUR

Dissertation Submitted to

The IIHMR University, Jaipur

for the partial fulfillment for the award of the degree of

Master of Business Administration (MBA)

in

Hospital and Health Management

by

Naware Bhawana Prakash

Under the Supervision and Guidance of

Dr. Seema Mehta

2025

CK BIRLA HOSPITALS | RBH

RBH/2025/MAY/HRD/6750

Date: 31st May 2025

TO WHOM SO EVER IT MAY CONCERN

This is to certify that **Bhawana Naware** has successfully completed her internship in the Patient Experience Department from 10th March 2025 to 31st May 2025.

Her behavior was respectful, punctual, and in alignment with hospital policies. She showed enthusiasm to learn, adapt, and communicate effectively with staff members, while maintaining a professional attitude throughout the program.

We commend her dedication and discipline during the tenure and believe she has gained valuable exposure to the work culture and expectations of a healthcare environment. We wish a continued success in all future academic and professional pursuits.

For **CK Birla Hospital – RBH**

Jeetendra 31/05/2025

Jeetendra Kumar Vijayvargiya
Senior Manager | HR

IIHMR UNIVERSITY

CERTIFICATE

This is to certify that dissertation titled **Assessment of turnaround time from token generation to billing counter arrival for outpatient consultations at Rukmani Birla hospital, Jaipur** is a record of the research work undertaken by Bhawana Prakash Naware in partial fulfillment of the requirements for the award of the degree of MBA (Hospital and Health Management) from the IIHMR University, Jaipur under my guidance and supervision and her approach to the research study has been sincere, scientific, and analytical.

Faculty Guide
IIHMR University, Jaipur
Date: 18/06/2025

School Dean
IIHMR University, Jaipur
Date: 18/06/2025

DECLARATION BY STUDENT

I hereby declare that this dissertation titled **Assessment of turnaround time from token generation to billing counter arrival for outpatient consultations at Rukmani Birla Hospital, Jaipur** is the Bonafide record of my original research work. I declare that it has not been submitted to any other university or institution for the award of any degree or diploma. Information derived from the published or unpublished work of others has been duly acknowledged in the text.

(Signature)

Name of the student: Bhawana Prakash Naware

Date: 18/06/2025

ABSTRACT

Title:

Assessment of Turnaround Time from Token Generation to Billing Counter Arrival for Outpatient Consultations at Rukmani Birla Hospital, Jaipur

Author Name:

Bhawana Prakash Naware

Advisor Name:

Dr. Seema Mehta

Keywords:

Turnaround Time, Outpatient Department, Billing Delay, Hospital Operations, Patient Satisfaction

Background:

Efficient management of outpatient billing processes is essential for delivering quality healthcare and ensuring patient satisfaction. Delays between token generation and billing counter arrival can disrupt service flow, cause patient dissatisfaction, and burden administrative staff. Despite digital systems, operational inefficiencies persist.

Objective:

To evaluate the efficiency of outpatient billing services by analyzing the turnaround time from token generation to billing counter arrival at Rukmani Birla Hospital, Jaipur.

Methodology:

A descriptive cross-sectional study was conducted over two months (April–May 2025) in the OPD of Rukmani Birla Hospital. Using convenience sampling, data were collected from 255 patients who obtained billing tokens. Token generation and billing arrival times were recorded using structured forms and analyzed using Microsoft Excel to calculate turnaround time statistics.

Results/Findings:

Only 37% of patients were billed within the hospital's defined turnaround time, with 63% experiencing delays. The average turnaround time was 10 minutes and 53 seconds. Delays were more frequent during the morning shift and peak hours (11 AM to 1 PM), with

contributing factors including inaudible announcements, documentation issues, staff confusion, and HIS system slowdowns.

Conclusions:

The study highlights significant delays in outpatient billing processes. To improve turnaround time and patient satisfaction, the hospital should implement audio-visual alert systems, deploy support staff or self-service kiosks, allocate staff based on peak hours, and ensure timely system maintenance. These interventions can streamline operations and enhance the quality of outpatient services.

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ABBREVIATIONS

- OPD – Outpatient Department
- TAT – Turnaround Time
- HIS – Hospital Information System
- SMS – Short Message Service
- IEC – Institutional Ethics Committee
- ID – Identity Document
- PIN – Personal Identification Number
- IT – Information Technology

1. CHAPTER

INTRODUCTION

1.1 Background of the Study

Healthcare delivery in India has undergone tremendous transformation over the past decade. With the rise in population, the burden on both public and private healthcare institutions has grown exponentially. Outpatient departments witness a heavy influx of patients every day for consultations, diagnostic tests, and follow-ups. While clinical efficiency is often prioritized in research and management discussions, administrative functions like registration and billing significantly affect the overall patient experience and service quality.

One of the critical aspects of operational performance in hospitals is Turnaround Time the time taken from the initiation of a process to its completion. In the outpatient setting, turnaround time between token generation and billing counter arrival is often overlooked, yet it plays a vital role in shaping patient satisfaction and service throughput. Billing delays not only create dissatisfaction but also cause overcrowding, delayed consultations, and staff burnout.

According to the National Health Profile of India (2021), urban tertiary care hospitals have reported consistent growth in OPD visits due to better infrastructure, availability of specialists, and accessibility [1]. However, this increased demand has not always been matched with improvements in workflow efficiency. Multiple studies have shown that long waiting times in hospitals -especially in billing and registration are major sources of frustration among patients [2].

Rukmani Birla Hospital in Jaipur, a renowned multispecialty tertiary care centre, receives hundreds of patients daily in its OPD. Despite the presence of a Hospital Information System (HIS), inefficiencies such as lack of coordination among staff, patients missing tokens, or system-related glitches contribute to long turnaround times at the billing desk. These delays result in a cascading effect throughout the patient care process.

1.2 Statement of the Problem

The OPD billing process at Rukmani Birla Hospital often experiences delays due to operational bottlenecks. These delays lead to increased patient wait times, overcrowding at counters, frustration among staff, and dissatisfaction among patients. Despite digital interventions like HIS and token systems, there is no structured study or monitoring system in place to track and analyse the exact time patients take from receiving their token to arriving at the billing counter.

Furthermore, variations in turnaround time based on time of day, staffing levels, or system downtime are not documented or addressed systematically. Without data-driven insights, hospital administrators struggle to implement corrective actions or allocate resources effectively.

1.3 Rationale of the Study

As healthcare becomes more patient-centric, administrative efficiency and time-bound services are gaining importance. Patients today expect fast, seamless services like other industries like banking or e-commerce. Long wait times for billing, especially after consultations or diagnostics, can negatively influence their perception of the hospital and discourage follow-up visits.

While multiple studies exist on reducing clinical turnaround times, like lab reporting or emergency admissions very few studies have focused on administrative turnaround time, particularly in the billing area. This study aims to fill that research gap by offering a detailed analysis of billing turnaround time in an Indian hospital context.

By identifying patterns and peak hours, comparing shifts, and assessing process-level delays, this study will provide actionable insights to hospital administrators. The findings will be used to propose workflow redesigns, digital interventions, staff reallocations, and better patient communication practices.

1.4 Aim of the Study

To evaluate the efficiency of outpatient billing services by analysing the turnaround time from token generation to billing counter arrival at Rukmani Birla Hospital, Jaipur.

1.5 Objectives of the Study

Primary Objective:

- To determine the turnaround time for billing services from token generation to billing counter arrival for outpatient consultations at Rukmani Birla Hospital, Jaipur.

Secondary Objectives:

- To identify the peak hours of billing activity.
- To compare turnaround times between the morning and afternoon shifts.
- To suggest practical process improvements for reducing billing turnaround time.

1.6 Scope of the Study

This study was limited to the Outpatient Department of Rukmani Birla Hospital, Jaipur. It includes only those patients who have taken a token and arrived for billing before for outpatient consultation. Emergency, inpatient, or pharmacy billing workflows was excluded from the study. Both manual and system-based factors affecting turnaround time will be considered.

The study will focus on:

- Time tracking from token generation to billing counter arrival.
- Peak load and shift-based variations.
- Identifiable delays caused by human errors, technological issues, or system inefficiencies.
- Observational insights from the field.

1.7 Significance of the Study

This study is significant for multiple stakeholders in the healthcare ecosystem:

- For Hospital Administrators: It provides clear data on where delays occur and helps guide staffing and process re-engineering.
- For Patients: Reduced wait time and smoother billing processes will improve their overall experience.
- For Healthcare Researchers: The study contributes new insights into non-clinical TAT measurement in Indian hospitals, an area that has not been well-documented.
- For Policymakers: The research adds to the national conversation around healthcare quality and access, especially in urban, private-sector hospitals.

Improving turnaround time at the billing counter will have ripple effects throughout the hospital from reducing overcrowding to enabling smoother transitions to diagnostics or pharmacy.

2. CHAPTER

REVIEW OF LITERATURE

S.no	Author(s) & Year	Study Location	Sample Size	Sampling Technique	Key Findings / Salient Features
1.	Raut & Phadke (2020)	Mumbai, India	400 OPD patients	Stratified random sampling	Found that OPD patients waited an average of 37 minutes from registration to billing; billing alone contributed to ~25% of total waiting time. Identified staff unavailability and patient misdirection as key causes. Recommended automated kiosks to streamline queues.
2.	Mahapatra et al. (2021)	10 Indian public hospitals	NA (Systematic Review)	Literature review	Analysed administrative delays across hospitals. Billing inefficiency was cited in 7 of 10 hospitals. Factors included lack of digital infrastructure, understaffed counters, and peak-hour congestion. Suggested policy-level standardization of TAT metrics.
3.	Sharma et al. (2022)	Pune, India	300 patients	Convenience sampling	Evaluated satisfaction with billing counters in a tertiary care setting. 45%

					of respondents reported confusion at counters and lack of staff guidance. Delay often arose due to patients not having ID documentation or unclear referral paths.
4.	Singh et al. (2019)	New Delhi, India	250 patients	Simple random sampling	Assessed effectiveness of triage-based registration. Turnaround time improved by 30% when patients were segmented by consultation type (e.g., diagnostics vs. general OPD). Billing counters prioritized patients with pre-filled forms.
5.	Patel & Mehta (2019)	Ahmedabad, India	150 patients	Time-bound observation	Focused on morning vs. evening shift billing delays. Found that average billing time was 6 minutes in the evening compared to 13 minutes in the morning due to higher footfall and inadequate staffing. Recommended shift-wise staff planning.

6.	Ghosh & Gupta (2020)	Kolkata, India	500 OPD records (audit)	Retrospective record analysis	Reviewed HIS data logs to calculate billing TAT. Morning shift accounted for 70% of delays. Concluded that staff fatigue and system downtime were key contributors to extended billing times. Suggested real-time queue displays and backup systems.
7.	Kumar et al. (2021)	Jaipur, India	200 patients	Cross-sectional study	Identified 5 major causes of billing delays: (1) HIS software lag, (2) patients missing token, (3) incorrect form submissions, (4) confusion in doctor mapping, and (5) lack of signage. Relevant to the current study setting.
8.	World Health Organization (2020)	National-level India	NA (Policy Report)	NA	Highlighted administrative efficiency as a key performance area in India's hospital quality index. Emphasized role of digitized queue management and trained billing personnel. Suggested standardized KPIs for OPD process monitoring.

9.	Choudhury & Verma (2021)	Bengaluru, India	320 patients	Mixed methods	Used both observations and interviews. Billing delays occurred mostly due to manual form processing and patient confusion about token flow. Introduced lean process principles, which led to a 40% reduction in average TAT.
10.	Jain et al. (2023)	Hyderabad, India	280 OPD entries	Observational study	Highlighted specific issues: absence of appointment-linked billing, repeat patient re-registration, and no provision for express billing lanes. Suggested pre-filled mobile registration apps and automated voice announcement systems.

3. CHAPTER

METHODOLOGY

3.1 Study Design

This is a descriptive cross-sectional study aimed at assessing the turnaround time from token generation to billing counter arrival for outpatient consultations.

3.2 Study Setting

The study was conducted at Rukmani Birla Hospital, Jaipur, a tertiary-level multispecialty hospital catering to a wide range of outpatient services. The hospital has a structured OPD setup with an integrated Hospital Information System (HIS) used for registration and billing processes.

3.3 Study Population

The study population consisted of patients attending the outpatient department (OPD) who were issued a billing token for consultation.

Inclusion Criteria

- Patients who collected a billing token for consultation.
- Patients who provided informed verbal consent.

Exclusion Criteria

- Patients who did not complete the billing process.
- Patients undergoing billing for inpatient services or emergency care.

3.4 Duration of the Study

The study was conducted over a period of 2 months, from 1st April 2025 to 31st May 2025.

3.5 Sample Size

A total of 255 patients were included in the study using a convenience sampling method.

3.6 Sampling Technique

Convenience sampling was employed, whereby eligible patients visiting the OPD during the study period and fulfilling the inclusion criteria were selected.

3.7 Data Collection Procedure

- Data were collected using a structured data collection form designed to capture:
- Time of token generation
- Time of arrival at the billing counter
- The data collection was performed either by trained hospital staff or the researcher. All data were entered into Microsoft Excel for preliminary organization and cleaned prior to statistical analysis.

3.8 Study Tools

Structured Observation Sheet**,** Captured the following variables:

- Unique patient code (non-identifiable)
- Date of visit
- Time of token generation
- Time of billing counter arrival
- Shift (morning/ afternoon)

3.9 Operational Definitions

- Turnaround Time (TAT): The time interval (in minutes) between token generation and arrival at the billing counter.
- Consultation Billing: Billing process conducted specifically for outpatient consultation services.
- Morning Shift: Operational hours from 10 AM to 1:00 PM.
- Afternoon Shift: Operational hours from 1:00 PM to 4:00 PM.

3.10 Data Analysis Plan

The data was entered and analysed using Microsoft Excel. The analysis included:

Descriptive Statistics:

Mean, median, and standard deviation of TAT across all patients.

Frequency distribution of TAT by shift (morning vs afternoon).

Peak hour identification through time-based grouping.

Comparative Analysis:

TAT comparison between morning and afternoon shifts using appropriate statistical charts and tabular summaries.

3.11 Ethical Considerations

The following ethical principles were adhered to throughout the study:

Informed Consent: Verbal consent was obtained from all participating patients before data collection.

Anonymity and Confidentiality: No personally identifiable data were collected. All participants were assigned unique codes to ensure anonymity.

Data Security: Data were stored securely on a password-protected system and used strictly for research purposes.

Ethical Approval: Approval from the Institutional Ethics Committee (IEC) of Rukmani Birla Hospital was sought prior to study commencement.

3.12 Study Limitations

Convenience sampling may introduce selection bias.

Results may not be generalizable to other hospitals with different workflows or patient volumes.

Manual time recording may involve observer-related limitations such as time rounding or entry delays.

4. CHAPTER

RESULTS

4.1 Shift-wise distribution of patients

An initial focus of the analysis was the shift-wise distribution of patients to determine whether the timing of patient arrivals had an impact on service load and potential delays in the billing process. Patients were categorized into two time-based shifts: Morning shift (10:00 AM to 1:00 PM) and Afternoon shift (1:00 PM to 4:00 PM).

The results revealed that a substantial majority of patients (70%) reported during the morning shift, while the remaining 30% attended during the afternoon shift. This distribution is visually depicted in Figure 4.1, which provides a graphical summary of patient footfall across the two-time intervals.

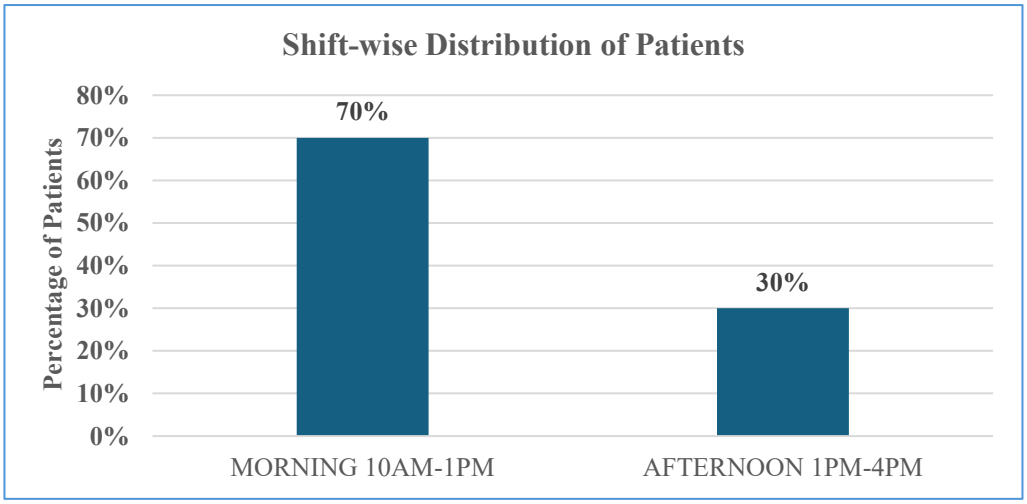

Figure 4.1: Shift-wise Distribution of Patients

As shown in Figure 4.1, patient attendance is significantly skewed toward the morning shift, with 70% of the outpatient population arriving between 10:00 AM and 1:00 PM. This uneven distribution indicates a heavier operational load during the first half of the day, which is likely to affect the efficiency of administrative processes, particularly billing.

The higher concentration of patients in the morning leads to longer queues, increased waiting times, and staff fatigue factors that collectively extends the turnaround time from

token generation to billing counter arrival. In contrast, the afternoon shift, with only 30% of the patients, is relatively less burdened and provides a more efficient billing experience.

This finding highlights the importance of time-based workload assessment and resource planning. The hospital will benefit from strategic redistribution of staff or implementation of appointment slots to manage the patient flow more evenly across the day.

4.2 Turnaround Time Compliance

An analysis of turnaround time (TAT) was conducted to assess whether patients were billed within the hospital's defined timeframe, measured from token generation to arrival at the billing counter.

Out of the total 255 patients, 37% were billed within the defined turnaround time, while 63% exceeded the expected limit, indicating that most patients experienced billing delays.

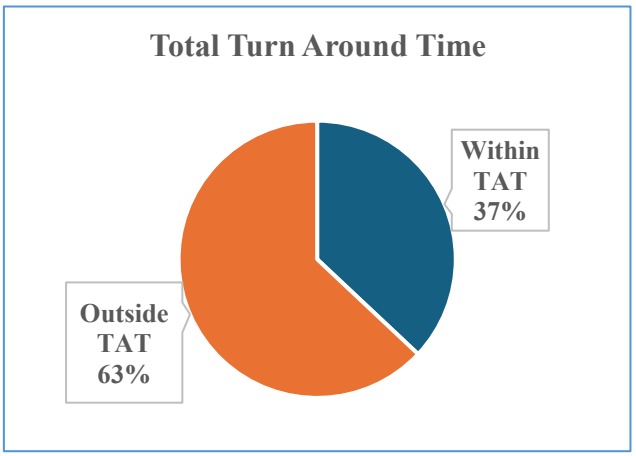

Figure 4.2: Proportion of Patients Within and Outside Turnaround Time

As shown in Figure 4.2, most patients (63%) were not billed within the hospital's standard turnaround time, confirming a significant delay in the outpatient billing process. The delays were predominantly observed during the morning shift, which had a higher patient load. These delays were caused by system-related slowdowns, insufficient counter staff during peak hours, and time taken for document verification. This finding highlights the need for workflow restructuring, optimized staff deployment, and digital enhancements to ensure timely billing and improved patient satisfaction.

4.3 Descriptive Statistics of Turnaround Time

Descriptive analysis was performed to understand the overall distribution of billing turnaround time. The mean turnaround time from token generation to billing counter arrival was found to be 10 minutes and 53 seconds. This reflects the average time taken by patients to complete the billing process after receiving a token.

Table 4.3: Descriptive Statistics of Billing Turnaround Time

Measure	Time (minutes)
Mean	10:53

4.4 Shift-wise Comparison of Turnaround Time Compliance

To evaluate the impact of patient load on billing efficiency, turnaround time (TAT) compliance was compared between the morning shift (10:00 AM–1:00 PM) and the afternoon shift (1:00 PM–4:00 PM).

In the morning shift, only 28% of patients were billed within the defined TAT, while 72% exceeded the expected time. In contrast, the afternoon shift showed better performance, with 58% of patients billed within TAT and 42% outside the defined limit.

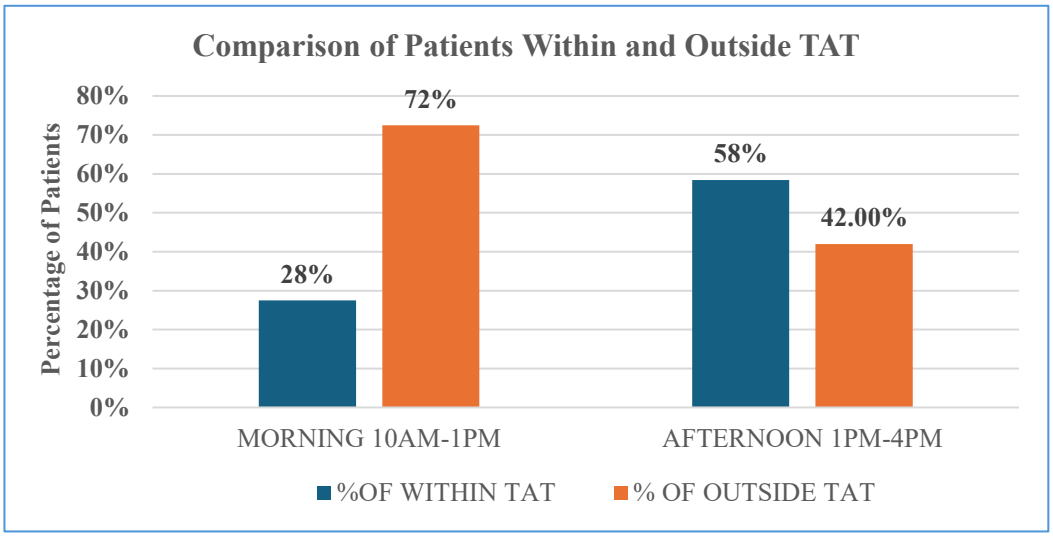

Figure 4.4: Comparison of Patients Within and Outside Turnaround Time (Shift-wise)

As shown in Figure 4.4, turnaround time compliance was significantly lower in the morning shift, which experienced a higher patient load. The increased delays during this period were due to limited billing staff, system congestion, and time spent on document verification. The afternoon shift, with comparatively fewer patients, showed improved compliance and smoother billing operations. These results highlight the need for better workload distribution, increased staff support during peak hours, and enhanced system responsiveness to ensure timely service delivery and improved patient satisfaction.

4.5 Time-wise Turnaround Time for Billing

An analysis was conducted to determine the time-wise distribution of turnaround time (TAT) for billing, categorized by the number of minutes patients waited between token generation and arrival at the billing counter.

As shown in Figure 4.5, 37% of patients were billed within 0–5 minutes, followed by 24% within 6–10 minutes and 15% within 11–15 minutes. The percentage of patients decreased steadily as the waiting time increased. Only 1–2% of patients waited more than 30 minutes for billing completion.

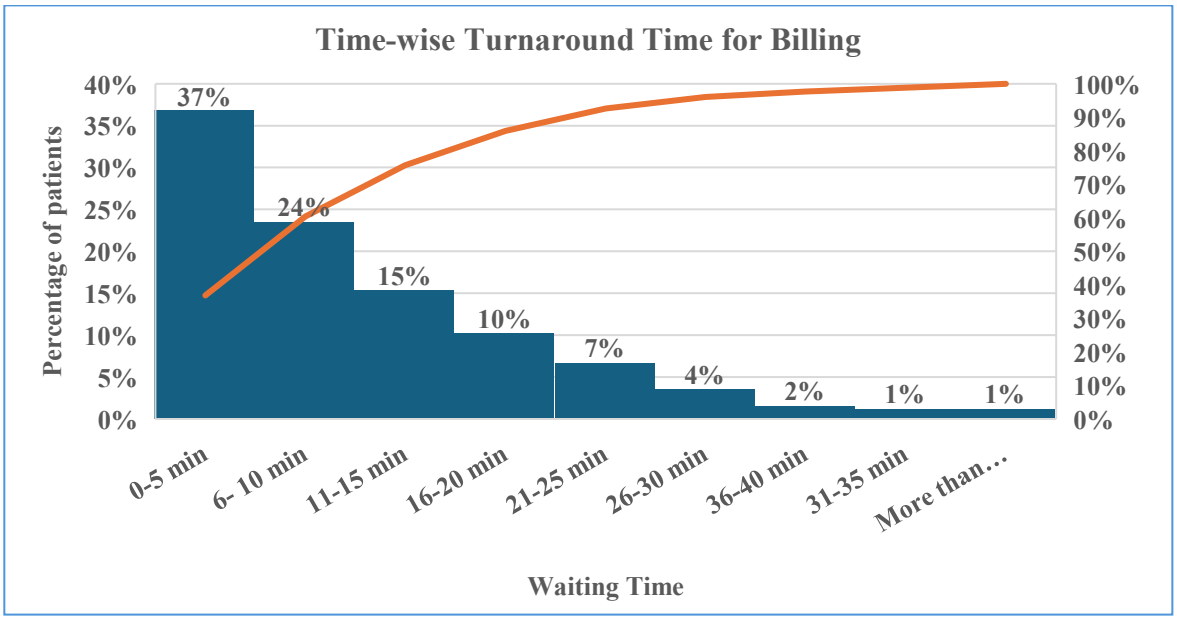

Figure 4.5: Time-wise Turnaround Time for Billing

As shown in Figure 4.5, It clearly indicates that most patients (76%) were billed within the first 15 minutes. However, a notable portion (24%) experienced billing delays beyond 15 minutes, with a small percentage waiting over 30 minutes. This distribution suggests that while the system is efficient for many patients, delays persist during peak periods or under operational strain, requiring targeted process improvements to ensure consistent service for all.

4.6 Time-wise Distribution of Patients Outside the Turnaround Time Limit

To identify the time periods contributing most to billing delays, the percentage of patients who exceeded the defined turnaround time (TAT) was analysed across hourly intervals.

As shown in Figure 4.6, the highest proportion of delayed cases occurred between 11:00 AM to 12:00 PM, accounting for 51% of patients who were outside the TAT. This was followed by 2:00 PM to 3:00 PM (46.87%), and 12:00 PM to 1:00 PM (41%). The percentage of delays steadily declined after 1:00 PM, with the lowest percentage (8%) recorded between 10:00 AM to 11:00 AM.

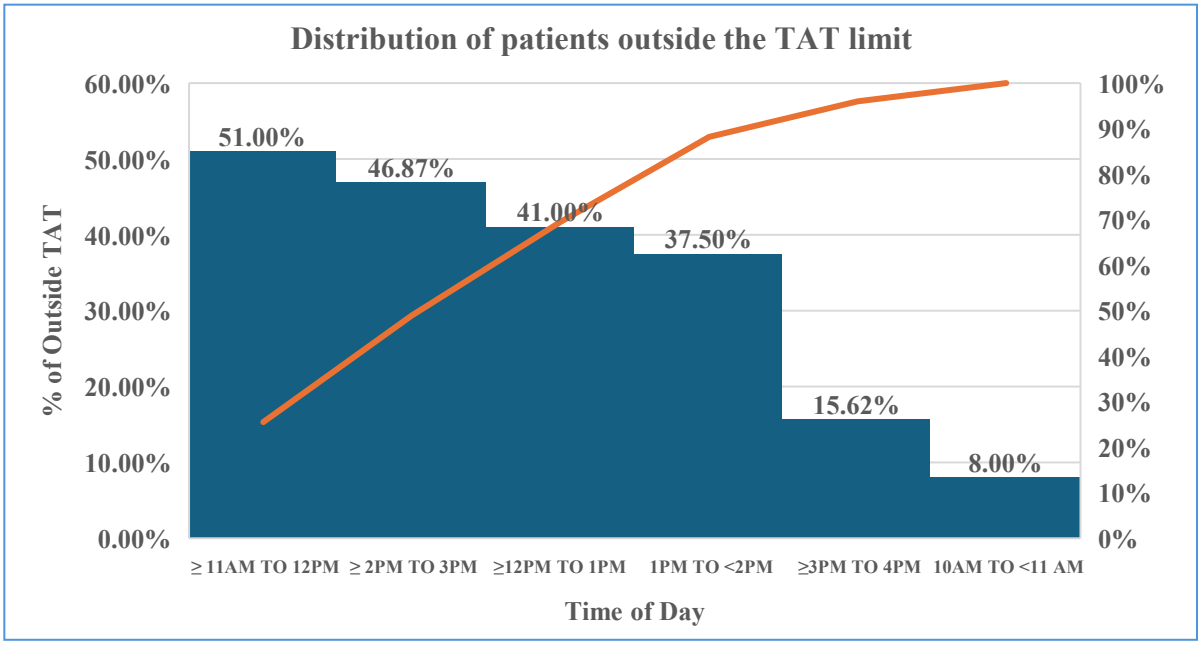

Figure 4.6: Time-wise Distribution of Patients Outside the Turnaround Time Limit

As shown in Figure 4.6, It highlights that most billing delays occurred late in the morning and early in the afternoon, particularly between 11:00 AM to 1:00 PM, when the outpatient department experienced peak footfall. These delays were primarily due to high patient volume, reduced billing efficiency, and stretched administrative resources during this window. In contrast, early morning and late afternoon slots experienced fewer delays, reflecting smoother operations with lower patient congestion. These findings reinforce the need for targeted staff reinforcement and workflow optimization specifically between 11:00 AM to 1:00 PM to improve turnaround time compliance.

5. CHAPTER

DISCUSSION

Overview of Findings

The study observed that only 37% of patients were billed within the hospital's defined turnaround time, while 63% experienced delays. This significant deviation from the standard reflects inefficiencies in the outpatient billing process. These inefficiencies can have a direct impact on patient satisfaction, staff workload, and overall service quality. The results clearly suggest a need for reviewing administrative processes and implementing targeted improvements to ensure timely service delivery.

Shift-wise Performance

The analysis of turnaround time by shift demonstrated a distinct difference in performance. The morning shift (10:00 AM to 1:00 PM), which experienced the highest patient load (approximately 70% of total cases), showed the lowest compliance, with only 28% of patients being billed within the defined time. In contrast, the afternoon shift (1:00 PM to 4:00 PM) showed comparatively better performance, with 58% of patients billed within the expected timeframe.

These results highlight the operational strain faced during morning hours. The high patient influx during this time leads to increased staff workload, longer queues, and delays in documentation, all of which contribute to extended turnaround times. This underscores the importance of dynamic resource allocation and shift-based planning to optimize service efficiency during peak hours.

Time-wise Turnaround Trends

When analysed by time intervals, it was found that 76% of patients were billed within the first 15 minutes of token generation. However, a considerable proportion faced delays extending beyond 15 to 30 minutes, and a small percentage experienced delays of over 30 minutes. The 11:00 AM to 1:00 PM window recorded the highest number of patients exceeding the TAT, confirming this period as the most congested and resource stressed.

This trend emphasizes the need for smarter queue management, integration of appointment-based priority systems, and technology-backed solutions such as real-time counter load tracking to prevent backlogs during these critical hours.

Comparison with Existing Literature

The study findings are consistent with observations made in previous research on outpatient billing efficiency in Indian healthcare settings.

- Raut & Phadke (2020) reported that billing delays accounted for approximately 25% of total OPD wait times, largely due to unclear workflows and insufficient staff during peak hours.
- Ghosh & Gupta (2020) highlighted that morning shifts contributed to over 70% of billing delays, which they attributed to high footfall and system fatigue.
- Mahapatra et al. (2021), through a systematic review of ten hospitals, emphasized the need for standardizing TAT metrics and digital queue tracking to reduce administrative delays.
- Jain et al. (2023) supported the implementation of pre-registration systems and appointment-based fast-track billing to mitigate crowding.

The present study reinforces these conclusions by demonstrating similar patterns of delay and by identifying practical areas for system-level improvements.

Identified Causes of Delay

Observations and staff inputs during the study period revealed multiple factors contributing to the delays. These included patient-side issues (e.g., missing documents), administrative inefficiencies (e.g., staff unawareness, manual verification), and technical problems (e.g., HIS downtime, malfunctioning of the display systems).

Strengths of the Study

- This is the first in-depth analysis of billing turnaround time at Rukmani Birla Hospital, offering localized, data-driven insights.
- Data was collected in real time over a two-month period, ensuring relevance and reliability.
- The study employed both shift-wise and time-wise analysis models, allowing for detailed pattern recognition and trend analysis.

Limitations of the Study

- The use of convenience sampling may limit generalizability to other settings with different operational structures.
- Manual recording of time data introduces the possibility of observer bias and slight inaccuracies.
- The study did not include qualitative feedback from patients, which could have added depth to the understanding of user experience and perceived delays.

Summary

This discussion highlights that most outpatient billing delays occur due to a combination of high patient volumes during peak hours, workflow inefficiencies, and system-level constraints. The morning shift is particularly affected due to demand-supply imbalances in staffing and administrative processing. The findings strongly advocate for measures such as optimized manpower planning, digitization of appointment and registration systems, and queue management tools to ensure a smoother and more time-bound billing process. These changes are essential not only for improving turnaround time but also for enhancing the overall quality of patient care and operational efficiency.

7. CHAPTER

CONCLUSION AND RECOMMENDATIONS

Conclusion

This study systematically evaluated the turnaround time (TAT) from token generation to billing counter arrival in the outpatient department of Rukmani Birla Hospital, Jaipur. The findings highlighted a significant gap between expected and actual service timelines, with only 37% of patients being billed within the hospital's defined TAT and 63% exceeding it.

The analysis revealed that delays were predominantly concentrated during the morning shift, which accounted for the highest patient volume. Time-wise trends also indicated that peak hours between 11:00 AM and 1:00 PM witnessed the most substantial delays. Contributing factors included missed tokens, inadequate documentation, manual registration errors, limited counter staffing, HIS-related disruptions, and insufficient audio-visual communication in the waiting area.

These inefficiencies, if left unaddressed, could compromise patient satisfaction, increase staff stress, and negatively impact overall operational efficiency. The findings emphasize the need for targeted administrative reforms, staff training, and technology integration to streamline the billing process and enhance the outpatient experience.

Recommendations

- Introduce audio notification systems and enhance display visibility with larger fonts and a 'missed token' column to prevent confusion and reduce missed calls.
- Install self-service kiosks or assign support staff to help patients, especially elderly or first-time visitors, complete registration accurately and quickly.
- Create a dedicated billing counter for patients with appointments to minimize their waiting time and prevent unnecessary queuing.
- Schedule routine maintenance of the Hospital Information System and display units to avoid downtime and ensure smooth billing operations.
- Deploy additional billing staff during peak hours and high-footfall days, especially Monday, Tuesday, Saturday, and 11 AM to 1 PM, to manage crowd flow efficiently.

Implication for Practice

Implementing the above recommendations is expected to:

- Improve turnaround time adherence.
- Minimize patient dissatisfaction caused by administrative delays.
- Enhance the overall efficiency and reliability of outpatient services.

Through strategic process redesign and supportive infrastructure upgrades, the hospital can move toward a more responsive, patient-centric OPD experience fostering both operational excellence and patient trust.

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