

A STUDY ON MEASURING PATIENT TURNAROUND TIME IN SUPER SPECIALITY HOSPITAL IN CHENNAI

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ABSTRACT

Turnaround time (TAT) is the overall amount of time needed to finish a task. In this study, patient turnaround times in emergency departments (Eds) and other OP departments are measured in an effort to improve patient satisfaction by effectively reducing wait times. To understand the delays and address them, the process flow in each department is analysed, and gaps between each step are documented. The goal of this article was to help patients minimise their TAT. The normal operating hours and peak operating hours for the outpatient department are divided in this article. Patients frequently wait a lengthy period for medical procedures during busy times.

KEYWORDS: TAT, reduce waiting time, patient tat, normal hours, peak hours.

OBJECTIVE OF THE STUDY

- To calculate the TAT for treatment procedures in casualty, cardiology, paediatric departments.
- To analyse the waiting time of the patient for each procedure during normal hours and peak hours
- To analyse the time interval using average TAT
- To come up with suggestions to reduce TAT

INTRODUCTION

Turn Around Time (TAT) is a tool for tracking how long a patient stays in the hospital. When a patient enters a hospital, questions like when they will register, how long they will wait, how long the registration process will take, and any issues that arise when the patient joins a department are all relevant. Little entry time, patient waiting for a consultation, and consultant time are all details data that are gathered and calculated in the OP department with the aid of TAT.

TAT aids in enhancing healthcare quality. Patients should not be blamed for longer hospital stays. The patient does not visit the hospital after that. TAT is useful in figuring out why patients wait in hospitals. The patient is waiting to be admitted to the hospital. TAT measurement is employed in industries other than healthcare.

Average patient waiting time is measured with the use of turnaround time. When a process is finished, the turnaround time is considered to be complete. Turnaround time aids in avoiding idling time. This aids in reducing process time if anyone handling a patient takes extra time. the time frequently spent in the hospital. In a hospital, the clients are the customers. Service excellence has contributed to the hospital's fame. Turnaround time is a useful tool for estimating when a procedure will be finished. It doesn't just boost the work's effectiveness. The relationship with the customer is improved. TAT gauges the efficiency of a single procedure.

Example: In the industrial sector, TAT is used to purchase raw materials and transform those commodities into finished goods. The process of production is finished. The merchandise is offered for sale. Processes are finished once. The production process is finished, and the number of hours it took to complete is measured as a contribution to the turnaround time.

REVIEW OF LITERATURE

According to “Matthias Grot 1 et.al, 2023”, “it is difficult to accomplish the desired efficient workflows and patient flows. To demonstrate the broad implications of patient arrival and consultation times on waiting times, this study used an operational research approach. (2) Techniques Simulated stochastic processes were utilised to mimic the intricate everyday processes of general practice. Patient arrivals, queuing discipline, and physician consultation durations are three major aspects affecting work operations when using traditional queuing models. Results (3) The maximum waiting time for each patient grew to more than 200 minutes in the first scenario with patients coming at a rate of 7.6 minutes apart and random consultation timings. When compared to when patients arrived on time, the second scenario with random patient arrivals and consultation times lengthened the average wait time by up to 30 minutes. a hectic morning”

According to “Niketa M Vasani et.al, 2023”, “the diagnosis of myocardial infarction depends heavily on the measurement of the cardiac biomarker troponin T. The management of patients in the emergency room and intensive care unit depends on the cardiac troponin T test having a short turnaround time (TAT). By removing batch processing and giving priority to the stat samples in the core laboratory, we decreased the TAT for the preanalytical and analytical processes. By substituting automatic result verification via a LIS for human result verification, we decreased the TAT for the post-analytical process. The overall standard of patient care could be improved by increased stat troponin T TAT compliance, particularly in the emergency and critical care units”.

According to “Ganes Raj Muthu Arumugam, 2022”, “by collecting patient data remotely utilising sensors, smart healthcare can extend the reach of digital healthcare. This can shorten the patient turnaround time (PTAT) and make it possible to deliver high-quality care. The PTAT measures how long it takes for a patient to be discharged from the hospital and go home. In 2016, Malaysia's Ministry of Health asserted that government hospitals still struggle to provide patients with high-quality care, particularly when comparing the PTAT of patients who receive treatment to those who are sent home without it. In this study,

we provide a Bluetooth minimal Energy-based method for PTAT optimisation, which uses minimal calibrated transmission power and enables real-time patient localization and patient movement monitoring in hospitals. A wearable device's distance from an Access Point (AP) placed throughout the facility is determined using the RSSI value. Data such as the wearable device name and RSSI value are taken and kept in a database when a patient passes an AP in order to pinpoint the patient's location. Three AP sites and eight wearable devices were used in a proof of concept to estimate distance”.

METHODOLOGY

This study is exploratory research the aim of the study reduces the patient turnaround time super speciality hospital in Chennai. In this study data collection method used a simple random sample. Per day 100 patients visit the outpatient department in hospital and by considering the table 95% confidence, 5% of error and 124 data were collected. For this study checklist was used to collect the data. In this study, the checklist mentions the procedure starting time and end time to be noted.

ANALYSIS

TABLE 4.1 - TABLE SHOWING THE COMPARATIVE PATIENT NORMAL HOUR AND PEAK HOUR IN THE CASUALTY DEPARTMENT

S.NO	PARTICULARS	WAITING TIME	AVERAGE TAT
1	Normal hours	0 hrs 18 mins	8hrs 4mins
2	Peak hours	8hrs 7 mins	6hrs 23mins

INTERPRETATION

The table shows the comparative average time in the casualty department. In normal hours patients wait for 0 hours 18 minutes in the casualty department. In peak hours patients wait for 8 hours and 7 minutes. In normal hours patients' average tat time is 8 hours 4 minutes. In peak hours patients' average tat time are 6 hours 23 minutes.

TABLE 4.2 - TABLE SHOWING THE COMPARATIVE PATIENT NORMAL HOUR AND PEAK HOUR IN THE CARDIOLOGY DEPARTMENT

S.NO	PARTICULARS	WAITING TIME	AVERAGE TAT
1	Normal hours	1hr 51mins	10hrs 7mins
2	Peak hours	1hr 33mins	3hrs 1mins

INTERPRETATION

The table shows the comparative average time in the cardiology department. In normal hours patients wait for 1 hour 51 minutes in the casualty department. In peak hours patients wait for 1 hour 33 minutes. In normal hours patients' average tat time is 10 hours 7 minutes. In peak hours patients' average tat time are 3 hours 1 minute.

TABLE 4.3 - TABLE SHOWING THE COMPARATIVE PATIENT NORMAL HOUR AND PEAK HOUR IN THE PAEDIATRIC DEPARTMENT

S.NO	PARTICULARS	WAITING TIME	AVERAGE TAT
1	Normal hours	0hr 48mins	4hrs
2	Peak hours	0hr 40mins	5hrs 13mins

INTERPRETATION

The table shows the comparative average time in the paediatric department. In normal hours patients wait for 0 hours 48 minutes in the casualty department. In peak hours patients wait for 0 hours 40 minutes. In normal hours patients' average tat time is 4 hours. In peak hours patients' average tat time is 5 hours 13 minutes.

MAJOR FINDINGS AND RECOMMENDATION

NORMAL HOURS

- Normal business hours are 8 a.m. to 10 a.m. and 2 p.m. to 3:30 p.m.
- Patients in the casualty section typically wait for the specialist physician. Doctors attend rounds in the morning. Patients occasionally still have to wait for the doctor.
- In the morning, doctors conduct rounds in the cardiac department. Patients therefore wait to see doctors.
- It is too late to begin the cleaning process in the paediatric department. The expert therefore watches till the cleaning is complete.

PEAK HOURS

- Peak times are from 10 am to 2 pm.
- Patients in the casualty department wait for medical attention from nurses, doctors, and radiologists.
- Patients in the cardiology department wait for their ECG.
- Patients at the paediatric department wait for a nurse, a nebulizer, and a consultant. Children occasionally disobeyed instructions.
- There are occasions when pharmaceutical billing is delayed, increasing wait times because the ward boy or ward girl is not available for moving.

RECOMMENDATION

- One ward boy or Ward girl is designated at all times.
- One scan machine is always available for patients who need it in the radiology department.
- In the cardiac department, one nurse is in charge of all operations. Instead, just one nurse is hired, which decreases the time patients must wait to have their ECG.
- Children in the lab refuse to have their blood drawn. They therefore return to the paediatric section. when the blood was drawn by the nurse. Blood will be drawn from the paediatric patient by nurses.
- Paediatric OP is a daily cleaning job that begins at 8:20 or 8:40 in the morning. At 8:35 am, patients arrived. The doctor doesn't see patients until everything has been cleaned up. Cleaning will be completed before 8:20 am.

CONCLUSION

Measures to reduce waiting times and turnaround times for patients increase patient flow in the hospital. In the healthcare industry, patients frequently wait a long time before using a hospital service. In hospitals, decreasing wait times helps with patient flow. The waiting time for patients is decreased thanks to this study. Patients' perceptions of hospital services are improved as they wait to be reduced. Turnaround time contributes to the hospital receiving effective and favourable feedback.

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