

**Optimizing Wellness Package
Utilization at Eternal Hospital,
Jaipur: An Observational Study of
Patient Adherence and
Turnaround Time**

**Presented by: Isha Agarwal
MBA – Hospital and Health
Management, IIHMR University
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Under the Guidance of: Dr JP Singh



INTRODUCTION

- **Rising lifestyle diseases in India: demand for preventive healthcare.**
- **Eternal Hospital's wellness packages offer diagnostics + consultations.**
- **Problem: Many patients do not complete the full package.**
- **Focus: Study patient adherence and turnaround time (TAT).**

OBJECTIVES

- **Measure the average turnaround time (TAT) at each service point in the wellness package.**
- **Quantify adherence rates across the patient cohort.**
- **Identify delays and service gaps leading to drop-offs.**
- **Provide evidence-based suggestions to improve workflow and patient engagement.**

LITERATURE REVIEW

A growing body of research has focused on improving hospital efficiency and reducing turnaround times using various quality improvement strategies. Selvaraj and Aravind (2022) implemented an integrated closed-loop process at Aravind Eye Hospital to reduce outpatient cycle time, resulting in a 19% improvement. However, the study did not assess scalability to other settings. Similarly, Solon et al. (2023) evaluated the effectiveness of electronic medical records (EMR) in rural Philippines, finding improved coordination and reduced bottlenecks, though the study lacked cost-effectiveness analysis. De Wet and Botes (2014) applied lean principles in a rural South African hospital to reduce patient waiting times; while the outcomes were positive, the study did not report on patient-level results or satisfaction. In diagnostic and reporting settings, AlZahrani et al. (2016) employed the FOCUS-PDCA model to reduce neurophysiology report turnaround times, which showed significant time improvements but was limited to a single department.

Oliveira et al. (2025) conducted a literature review on performance measurement in primary health care and highlighted the utility of time-based metrics, yet emphasized a lack of standardization across systems. Watson et al. (2024) demonstrated that student-run clinics could benefit from Plan-Do-Study-Act (PDSA) cycles, leading to reduced cycle times, although long-term sustainability was not evaluated.

Technological interventions have also been explored. Lee et al. (2024) examined real-time patient tracking and found it enhanced transport efficiency within hospitals, although the burden of training and resource allocation remained unaddressed. Ahmed and Tariq (2023) adopted a hybrid data-driven approach in Pakistani public hospitals to reduce patient wait times, achieving improvements despite limited transparency regarding the algorithms used. Gao et al. (2023) introduced a mobile communication app in pediatric emergency care, which enhanced communication and reduced delays, but issues related to usability and privacy were not sufficiently explored. Lastly, Smith and Hernandez (2023) utilized rapid improvement cycles in a primary care setting, achieving a 12% reduction in patient cycle time, though the study did not account for external factors influencing outcomes.

METHODOLOGY

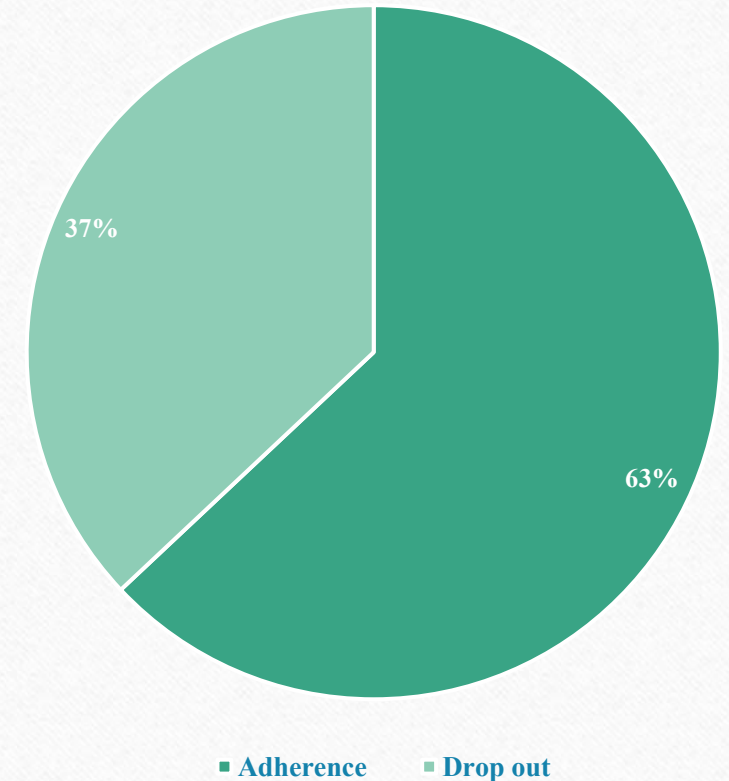
- **Design: Quantitative observational study.**
- **Tools: Structured checklist, Excel.**
- **Inclusion: Adults ≥ 18 years, standard wellness package users.**
- **Data Analysis: Data will be cleaned and analyzed in Microsoft Excel.**
 - **Descriptive analysis to summarize turnaround time and adherence rates**
 - **Process flowcharts and visual timelines will support interpretation**
- **Sample Size: 100 patients.**
- **Sampling Technique: Convenience sampling of eligible patients presenting during the study period.**
- **Data Collection Tools: Structured observation checklist recording:**
 - **Entry and exit times at each service station**
 - **Completion of each service step (registration, diagnostics, consultation)**
 - **Noted delays or cancellations**

ANALYSIS AND RESULT

- **Patient Adherence to the Wellness Package:**
 - **Total patients completing the full wellness package: 63**
 - (This includes all diagnostics, physician, and dietary consultations)
 - **Adherence Rate: 63%**
 - **Drop-out Rate: 37%**

This pie chart illustrates that more than one-third of patients did not complete the process.

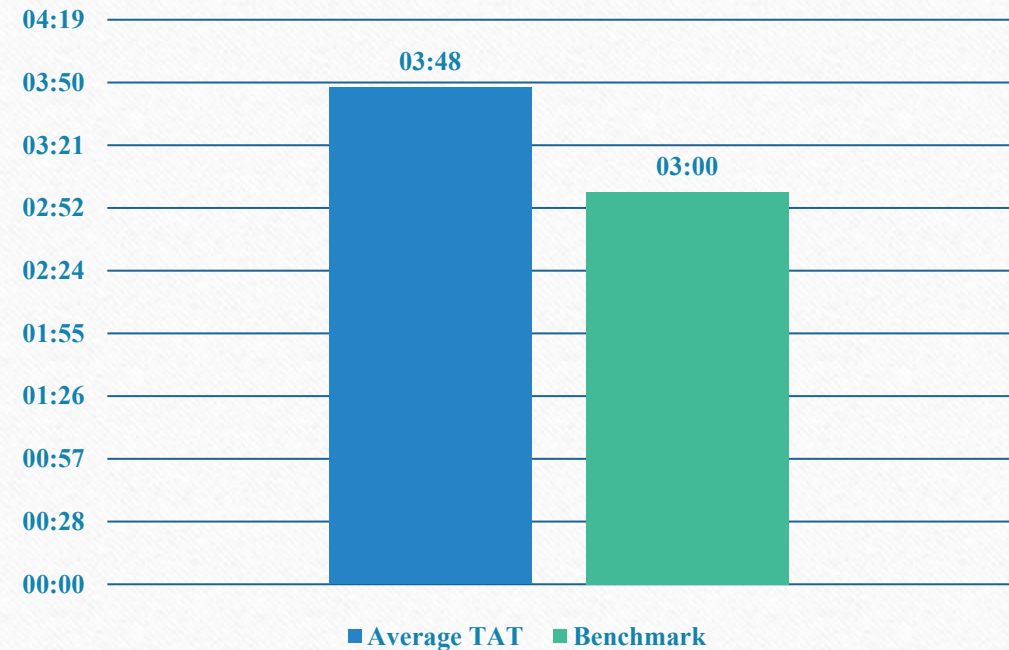
Patients who dropped out typically did so after diagnostic testing but before consultations. Reported reasons included extended waiting periods, confusion regarding the next steps, and time constraints.



➤ **Turnaround Time (TAT) Analysis:**

- **Average Turnaround Time (TAT): 3 hours 48 minutes**
- **TAT Range: 2 hours 15 minutes to 5 hours 24 minutes**
- **Longest Delays: Recorded during the ECHO**

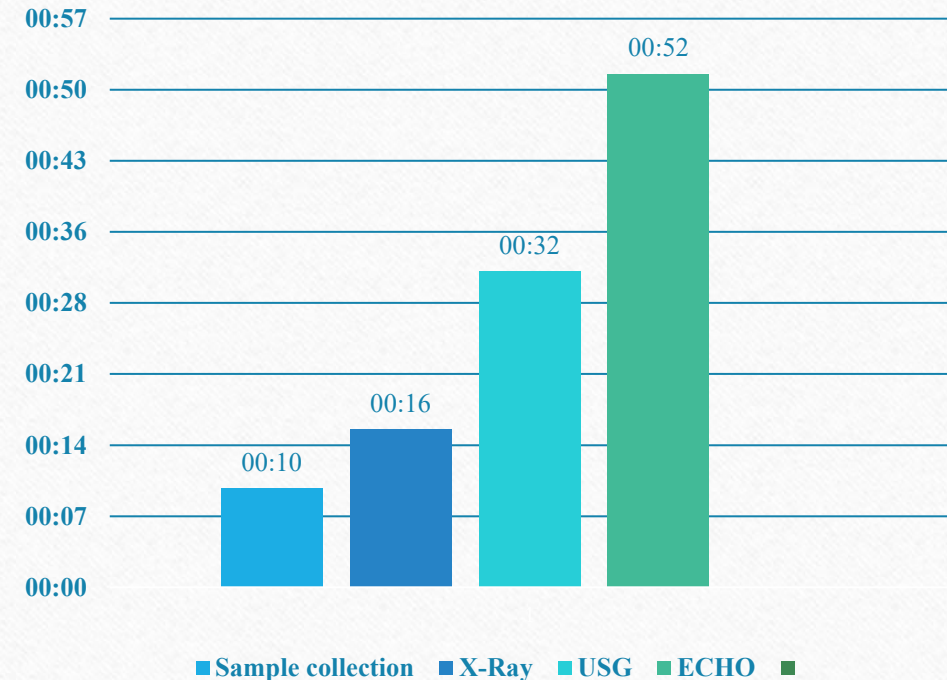
This indicates that the observed average TAT exceeds ideal expectations for a preventive health check-up visit.



➤ **Average turnaround time (TAT) at each service point in the wellness package:**

- **Sample Collection: 3h 9 min**
- **ECG: 4 min**
- **X-RAY: 33 min**
- **USG: 47 min**
- **ECHO: 1h 20min**

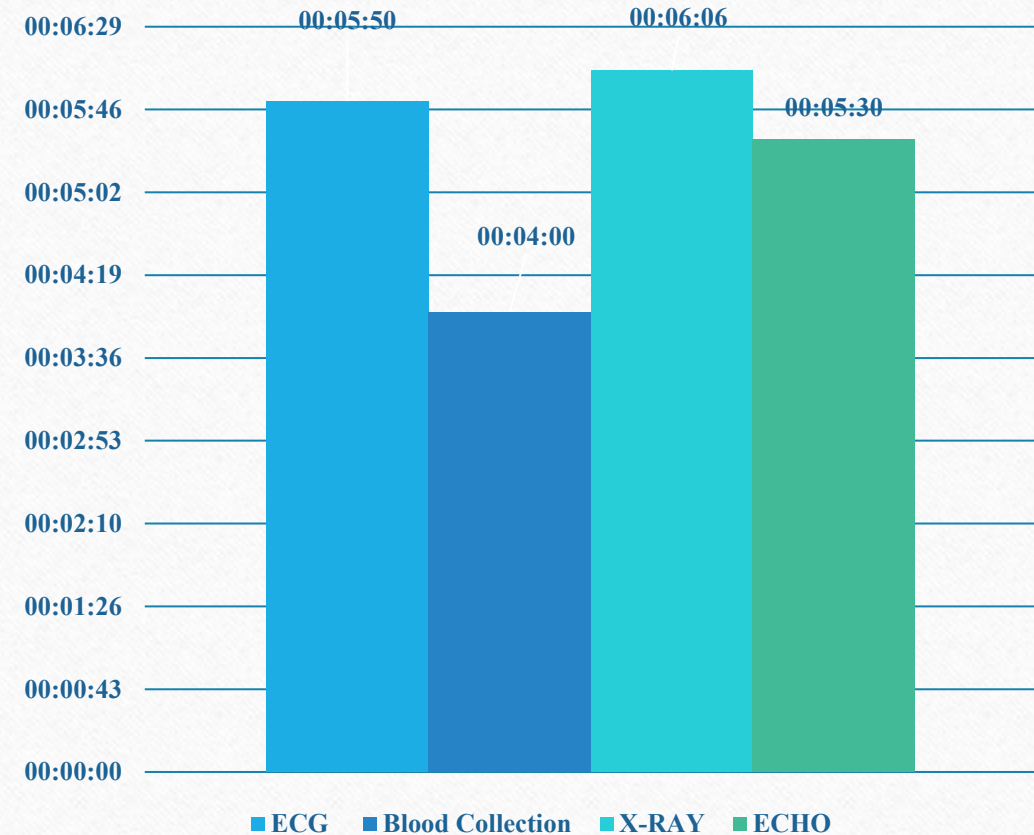
The long waiting time affect the adherence rate.



➤ Avg. time spent per procedure:

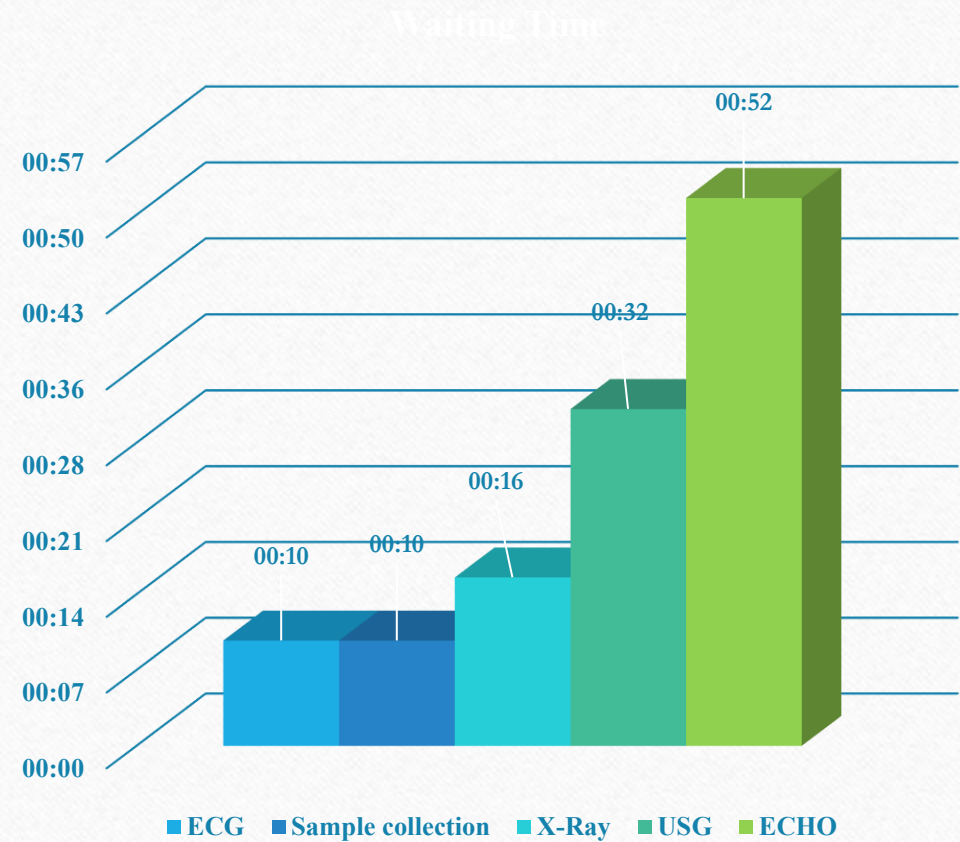
- ECG: 5min 50 sec
- Blood Collection: 4 min
- X-Ray: 6min 6 sec
- ECHO: 5min 30sec

The bar chart shows that the procedures themselves are relatively short, but cumulative waiting time adds significant delay.



➤ **WAITING TIME:**

- **Sample collection: 10 min**
- **ECG: 10 min**
- **X-RAY: 16 min**
- **USG: 30 min**
- **ECHO: 52 min**



➤ Timeline of Patient Journey (Registration to File Preparation):

	ECG	➡	SAMPLE COLLECTION		➡	X-RAY	➡	USG	➡	ECHO
	ECG	➡	X-RAY	➡	SAMPLE COLLECTION		➡	USG	➡	ECHO
	SAMPLE COLLECTION		➡	ECG	➡	X-RAY	➡	USG	➡	ECHO
	SAMPLE COLLECTION		➡	ECG	➡	X-RAY	➡	ECHO		
	ECG	➡	SAMPLE COLLECTION		➡	X-RAY	➡	ECHO		
	ECG	➡	SAMPLE COLLECTION		➡	ECHO	➡	X-RAY		

Path ID	Avg. TAT	Waiting Time	% of patient
A	3h 57min	3hr 37min	4%
B	4hr 47min	4hr 23min	1%
C	4hr 43min	4hr 20min	1%
D	3hr 28min	3hr 09min	45%
E	3hr 29min	3hr 10min	47%
F	3hr 11min	2hr 54min	2%

Preferred Path:

Path A & D, E are more suitable

GAPS IDENTIFIED

- **Delayed Report Generation:** Laboratory delays significantly stalled subsequent consultations.
- **Long Waiting Time:** Waiting time between different procedures contribute to low adherence rate and results in patient dissatisfaction.
- **Lack of Clear Guidance:** Many patients were unaware they needed to return for physician consultation post-diagnostics.
- **Morning Rush Hours:** High concentration of patients between 8:00–9:30 AM caused process congestion.
- **No Real-Time Updates:** Patients were not informed of expected wait times or service sequencing, leading to uncertainty and dissatisfaction.

RECOMMENDATIONS

- **Operational: Staggered scheduling** (To mitigate the issue of patient crowding during early morning hours (particularly 8:00–9:30 AM), an appointment-based staggered scheduling system should be adopted)
- **Tech: Digital dashboards, WhatsApp/SMS alerts, real-time tracking** (Patients are informed via screen displays or messages about their report status and upcoming steps).
- **Communication: Orientation** (Patients are informed during booking or registration about the entire process and estimated duration), **better signage, multilingual materials** (Helps those who don't understand English or Hindi well).
- **Training: Staff workshops, simulation exercises** (Teach how to communicate clearly, manage queues, and handle peak hours and to prepare staff to handle high patient volume).
- **Policy: SOPs, dedicated slots** (Consultants should have dedicated time blocks, so they don't clash with regular OPD), **KPI tracking for TAT** (Every month, the hospital should check the average TAT and take actions if it's too high).

CONCLUSION

Key Insight: Longer TAT significantly reduces adherence.

Impact: Operational inefficiencies hinder preventive care goals.

Way Forward: Integrating tech + better communication = improved patient flow & satisfaction.

Call to Action: Institutionalize improvements to enhance completion rates and optimize wellness package value.



THANK YOU

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