

A Study on Waiting Time Analysis in Wellness Department

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Abstract

Waiting time is one of the major factors influencing patient satisfaction in healthcare organizations. The wellness department plays an important role in preventive healthcare services such as health check-ups, screening tests, and early diagnosis. However, long waiting time can reduce patient satisfaction and operational efficiency. This study was conducted in the wellness department to analyse waiting time across various service stages. Data were collected from hospital records during the period December 2025 to February 2026 using a sample size of 150 patients selected through simple random sampling. Percentage analysis was used as the statistical tool. The study found that procedures such as TMT and Echo recorded the highest waiting time due to diagnostic delays and specialist availability. The study recommends implementation of digital registration systems, improved staffing, and better departmental coordination to reduce waiting time and enhance patient satisfaction. Keywords: Waiting Time, Patient Flow, Wellness Department, Hospital Administration, Patient Satisfaction

1. Introduction

Healthcare organizations strive to provide efficient and quality services to patients. Waiting time is one of the most important indicators of service efficiency and patient satisfaction. Waiting time refers to the duration a patient spends between arrival at a healthcare facility and the completion of required services.

Long waiting time may lead to patient dissatisfaction and poor service perception.

The wellness department mainly focuses on preventive healthcare services such as health check-ups, screening tests, and lifestyle counselling. Patients visiting wellness centres expect quick and organized services because they are generally healthy individuals seeking preventive care. However, delays may occur during registration, diagnostic procedures, consultation, and report generation. This study aims to analyse the waiting time in the wellness department and identify the major causes contributing to delays.

Objective

- To study the factors contributing to waiting time in the wellness department.
- To identify the key stages where waiting time is maximum in the wellness department.
- To assess operational and administrative factors contributing to patient waiting time.
- To analyse patient flow and service delivery processes in the wellness department.
- To understand patient perceptions regarding waiting time and service efficiency.
- To suggest measures to reduce waiting time and improve patient satisfaction

2. Literature Review

Previous studies have examined waiting time management in healthcare systems. Erlang (1909) introduced queueing theory which forms the foundation for waiting time analysis. Bailey (1952) analysed appointment systems in hospital outpatient departments and found that effective scheduling can reduce waiting time.

Little (1961) proposed Little’s Law which explains the relationship between queue length and waiting time. Cayirli and Veral (2003) highlighted the importance of appointment scheduling in reducing patient waiting time in healthcare facilities. Green (2006) applied queueing analysis in healthcare operations and suggested that better resource allocation and workflow management help reduce service delays.

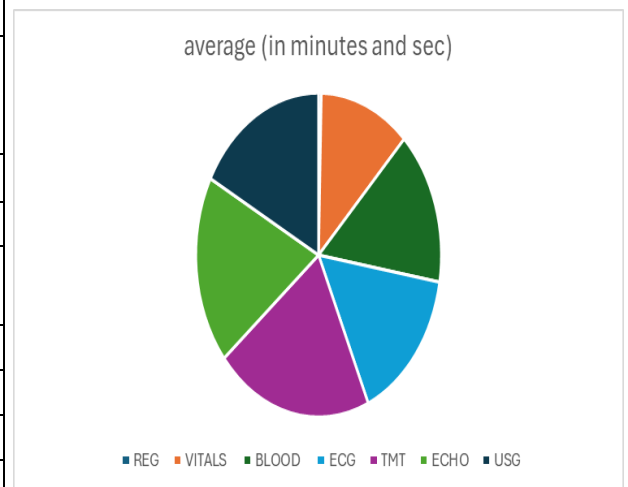
3. Methodology

The study adopted a descriptive research design. Data were collected from hospital records and direct observations in the wellness department. A sample of 150 patients was selected using simple random sampling. The study was conducted during the period from December 2025 to February 2026. Percentage analysis was used to analyse waiting time across different procedures including registration, vitals, blood collection, ECG, TMT, Echo, and USG.

4. Analysis

Table 4.1 shows the average time of the month December

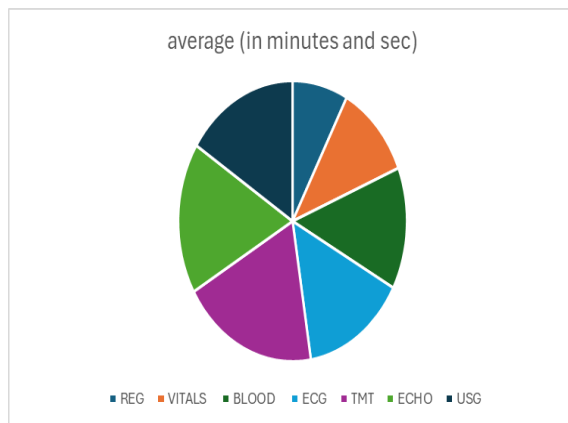
DECEMBER		
PROCEDURE	WAITING TIME	AVERAGE (in minutes and sec)
REGISTRATION	8 hr 6 min	10:42
VITALS	12 hr 8 min	14:05
BLOOD COLLECTION	15 hr 6 min	18:7
ECG	15 hr 9 min	19:10
TMT	20 hr 9 min	25:10
ECHO	19 hr	22:8
USG	17 hr 41 min	20:9



The December data shows that TMT (25:10 minutes) has the highest average waiting time, making it the main source of delay. Echo (22:8 minutes) and USG (20:9 minutes) also show higher waiting times compared to other departments. Blood Collection and ECG have moderate delays. Registration (10:42 minutes) has the lowest waiting time, indicating better efficiency in the initial process

Table 4.2 1 shows the average time of the month January

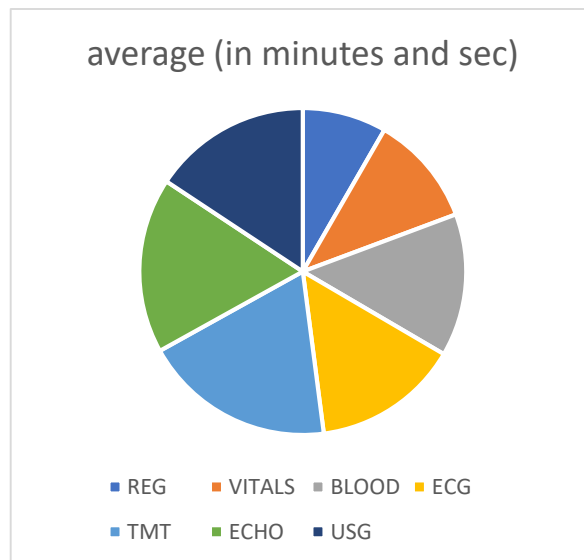
JANUARY		
PROCEDURE	WAITING TIME	average (in minutes and sec)
REGISTRATION	8 hr 5 min	10:2
VITALS	11 hr 9 min	14:28
BLOOD COLLECTION	15 hr 25 min	18:3
ECG	15 hr 7 min	18:9
TMT	20 hr 8 min	24:9
ECHO	18 hr 9min	22:7
USG	17 hr 27 min	20:7



The January data shows that **TMT (24.9 minutes)** has the highest average waiting time, making it the major source of delay. **Echo (22.7 minutes)** and **USG (20.7 minutes)** also have higher waiting times compared to other departments. Blood Collection and ECG show moderate delays. Registration (10.2 minutes) has the lowest waiting time, indicating better efficiency in the initial patient process

Table 4.3 1 shows the average time of the month February

PROCEDURE	WAITING TIME	average (in minutes and sec)
REGISTRATION	9 hr 1min	10:92
VITALS	12 hr02 min	14:42
BLOOD COLLECTION	15 hr 43 min	18:52
ECG	15 hr 8 min	19:04
TMT	20 hr 77min	24:92
ECHO	18 hr 9 min	22:78
USG	17 hr17 min	20:6



The data shows that TMT has the highest average waiting time, making it the main source of delay among all departments. Echo also has a comparatively higher waiting time than most other procedures. Vitals and Blood Collection show moderate waiting times, indicating some level of delay during peak hours. Registration, ECG, and USG have the lowest waiting times, reflecting better efficiency and smoother patient flow in these areas.

5. Findings

- Registration delay for new patients.
- Insufficient staff in vitals and blood collection.
- ECG delays due to inexperienced technicians.
- TMT and Echo procedures recorded the highest waiting time.

6. Recommendations

- Introduce digital self-registration kiosks.
- Recruit additional staff for vitals and blood collection.
- Appoint experienced ECG technicians.
- Assign a dedicated cardiologist to reduce delays in TMT and Echo reports.

7. Conclusion

Efficient waiting time management is essential for improving patient satisfaction and hospital operational efficiency. The study identified diagnostic procedures such as TMT and Echo as the major contributors to waiting time in the wellness department. By improving staffing, implementing digital systems, and optimizing workflow processes, hospitals can significantly reduce waiting time and enhance the overall patient experience.

8. Reference

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