# TO IMPROVE OPERATIONAL EFFICIENCY IN OPD OF THE HOSPITAL USING SIX-SIGMA METHODOLOGY

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# INTRODUCTION

Conducting an analysis of patient flow to pinpoint particular inefficiencies in patient visits with the goal of enhancing efficiency by implementing interventions to reduce the average time of patient visits. The study concludes that patient flow analysis proves to be an effective approach in identifying inefficiencies and collecting patient flow data efficiently. Overall, patient flow analysis is closely associated with three primary areas. [1]

(i) Patient scheduling and admissions,

(ii) Patient routing and flow schemes,

(iii)Scheduling and availability of resources [2]

The integration of patient priority into a scheduling problem involves scheduling patients into predetermined time slots of a diagnostic resource, considering the maximum recommended waiting time for each priority.[3]

To enhance patient flow in the emergency department, the first initiative involved allocating a dedicated operating room for unscheduled and "add-on" cases. This resulted in a 5 percent increase in surgical cases and a 2 percent overall time reduction, along with improved staffing predictions. Another significant measure was the introduction of a standardized fax report form to enhance communication between ED nurses and receiving nurses, substantially reducing time spent on phone communication between different departments. This led to a 67% reduction in the median time from the decision to admit to physical placement in an inpatient bed. The impact of implementing a fast-track lane to decrease waiting times for low-priority patients in an emergency room was also studied. Emergency rooms typically prioritize patients based on sickness levels, causing low-priority patients to experience prolonged waits. The introduction of a fast-track lane, specifically designed for a particular patient type, using minimal resources, demonstrated a substantial reduction in patient waiting times.

## RESEARCH QUESTION

What were the causes for delay in delivery of services in hospitals' Outpatient Department, and how do they contribute to its low efficiency?

## RESEARCH OBJECTIVES

1. To assess the causes of delay in availing OPD services

2. To suggest possible remedial measures to improve it.

## RESEARCH METHODOLOGY

The research design employed in this project was a cross-sectional study, aiming to investigate the waiting time length and its contributing factors in a healthcare setting. The researcher actively observed the outpatient process at various stations, including the waiting area, registration counter, nursing station, and billing counter. First-hand observations were made both before and after the implementation of corrective measures to gauge variations in waiting times and assess the effectiveness of the interventions. Primary data was collected by recording patient flow through different steps such as registration, waiting for vitals check-up, vitals check-up, waiting for consultation, and actual consultation. Interviews and brainstorming sessions with OPD staff, including doctors, nurses, front desk personnel, and the manager, were conducted to identify potential areas of delay. Additionally, secondary data included time captured on SAP, patient feedback reports, and compiled information on patients leaving due to extended wait times.

## RESULTS & DISCUSSION

This report analysed patient time distribution in various specialty clinics within a hospital's outpatient department (OPD). The Sports Orthopaedic clinic predominantly involved doctor consultations, with patient lateness contributing to delays, and registration consuming 21% of total time. In Paediatric Orthopaedic, doctor consultations account for the maximum patient time, with delays caused by patients and

registration taking up 22% and 20% of the total time, respectively. The Cardiology clinic demonstrates an efficient setup, where patients rarely arrive late, and the majority of their time (72%) was spent on doctor consultations, with registration taking 23%. The Neurology clinic saw 63% of patient time consumed in registration, while the Joint Replacement clinic on the first floor, catering to a high patient volume, shows nearly half of patient time spent waiting for senior doctor consultations. The latter clinic's significant waiting time warrants attention for improvement. Additionally, the report identifies areas of waste in the clinics, aligning with Lean principles, including over-production, excess inventory, unnecessary transport, over-processing, idle time, operator motion, and occasional issues with data quality during peak hours. Addressing these inefficiencies was crucial for optimizing patient experiences and enhancing overall clinic performance.

## CONCLUSION

The waiting time in the OPD of the hospital was proving to be a major concern for the management, because BHAS promised its patients world-class service delivery. This project highlighted many causes of increased waiting time in the OPD, and many suggestions were made with a view to reducing this time. At the end of the 3-month period, a noticeable change was observed. The waiting time was reduced from an earlier high of 60 minutes to an acceptable limit of 30 minutes.

As part of increasing efficiency and improving the services provided to the valued patients, further measures were being strategized to bring down the waiting time further.

### *REFERENCES*

1.  *Lean Six SIGMA for Service: How to Use Lean Speed and Six SIGMA Quality to Improve Services and Transactions.*

2.  *10 Principles for Outstanding Outpatient Customer Service.*

3.  *Reducing Consultation Waiting Time and Overtime in Outpatient Clinic: Challenges and Solutions.*