

**A STUDY TO ANALYSE THE
TURNAROUND TIME OF THE
DEPARTMENT OF BIOCHEMISTRY IN CARE
HOSPITALS, BANJARA HILLS,
TELANGANA**

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INTRODUCTION

Several factors influence a hospital's capacity to deliver services that meet the needs, desires, and expectations of consumers, with Turnaround Time (TAT) being a crucial parameter for evaluating this standard. Although there is no universally certified definition for TAT, for the purpose of this context, we define it as the duration between a clinician placing an order for a clinical or diagnostic test and the moment when they receive the corresponding results.

These categories are commonly utilized to categorize errors and delays, making them a frequent descriptor of Turnaround Time (TAT) [1]. According to Hara P Pati et al, in their 2014 article titled 'Turnaround Time (TAT): Difference in Concept for Laboratory and Clinicians,' the emphasis on the reliability of laboratory tests often differs from the clinician's perspective, where priority is placed on the prompt availability of a report. The article highlighted the absence of a clear definition for TAT, emphasizing its varied interpretations for different stakeholders such as patients, clinicians, and laboratory personnel [3].

Bruce A. Jones et al, in their article 'Physician satisfaction with clinical laboratory services,' discovered that physicians expressed satisfaction with the accuracy and reliability of laboratory test results but dissatisfaction with turnaround time, indicating an area for improvement [4]. Abhinav Dileep Wankar, in the research article 'Study of determination of laboratory turnaround time in tertiary care hospital in India' (2014), identified various factors contributing to overall turnaround time. All three stages—Pre-Analytical, Analytical, and Post-Analytical—require monitoring, and improvements should be implemented to meet established standards [5]. Dr. Bhagyashree K Bhuyar, in the article 'Monitoring of Turnaround time (TAT) in Biochemistry Laboratory of a tertiary care hospital in Karwar' (2017), analyzed all three stages that constitute the overall laboratory turnaround time to understand their individual contributions. The post-analytical stage represents an opportunity for improvement by implementing an automated process for delivering verified reports after analyses [2].

RESEARCH METHODOLOGY

A three-month observational cross-sectional study was carried out at CARE Hospitals, Banjara Hills, focusing on test requisitions from the Emergency Room (ER), Inpatient Department (IPD), and Outpatient Department (OPD) to the Biochemistry department, specifically between 10:00 AM to 6:00 PM. The total number of samples analyzed during this period was 1140, with 900 from IPD, 180 from OPD, and 60 from ER.

The study was segmented into three phases corresponding to different time frames for test requisitions. Phase 1 covered samples analyzed between 10:00 AM to 12:30 PM, Phase 2 between 12:31 PM to 3:45 PM, and Phase 3 between 3:46 PM to 6:00 PM.

To evaluate the overall Turnaround Time (TAT), the study dissected the process into the Pre-Analytical Stage, Analytical Stage, and Post-Analytical Stage for each phase. This breakdown aimed to understand the contribution of each stage and identify any associated limitations. Data were collected using a predefined checklist, supplemented by secondary data obtained from the Laboratory Information System (LIS).

RESULTS & DISCUSSION

The Out-Patient Department (OPD) demonstrated the highest overall average Turnaround Time in the Department of Biochemistry with an average of 3 hours, 14 minutes, and 23 seconds. Following that, the IPD had an average TAT of 2 hours, 25 minutes, and 7 seconds, while the Emergency Room showed the lowest at 2 hours, 9 minutes, and 42 seconds.

The primary contributors to the overall average TAT across all three departments were the Pre-Analytical and Post-Analytical Stages, constituting 58.92%, 67.33%, and 59.27% for ER, OPD, and IPD, respectively. Another significant finding was the increase in TAT during Phase 1 (10:00 AM – 12:30 PM) in all three departments, primarily attributed to the heightened workload during these hours.

CONCLUSION

The analysis encompassed three key stages contributing to the comprehensive turnaround time of a laboratory test: the Pre-Analytical Stage, Analytical Stage, and Post-Analytical Stage. Ensuring effective performance across all three stages is crucial as they are interconnected, impacting results, quality of care, and patient satisfaction.

The study identified that the primary delay in overall TAT occurred during in the first phase, time emerged as a significant factor influencing delays in Turnaround Time (TAT). Other notable contributors to TAT delays encompassed policy irregularities arising from diminished senior management engagement in monitoring and policymaking, breakdowns in equipment, shortages of staff, and suboptimal utilization of the Laboratory Information System (LIS). Enhancing TAT requires an ongoing process, necessitating a comprehensive approach to mitigate obstacles for optimal TAT.

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