

# Optimizing Operation Theatre Utilization: A Time and Motion Study in a Tertiary Care Centre in Southern India

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## Research Article

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# Abstract

**Objective:** to assess and optimize operation theatre utilization in a tertiary care center in Southern India

**Methodology:** This cross-sectional time and motion study was conducted in a tertiary care center in southern India from 10th November 2022 to 9th December 2022. Convenient sampling was used for sample selection, including only scheduled OT cases and excluding emergency cases. Data collection involved manual recording of time using a stopwatch while accompanying patients through various service points from the pre-operative area to the postoperative area. The collected data was entered into Microsoft Excel 2016 and analyzed using IBM SPSS version 20. Descriptive statistics were employed to calculate the time consumed for patient flow and to describe the distribution of time taken at different stages. Ethical approval was not obtained as the study focused on process flow and did not involve personal patient information. Confidentiality was maintained through the use of unique identification numbers. This methodology allowed for the calculation of patient flow time and the analysis of delay factors, providing valuable insights into the operation theatre process and factors contributing to delay.

## Results:

The findings revealed variations in the average time spent in the operating theatre for different specialties, with General Surgery having the longest duration ( $365.65 \pm 181$  minutes) and Pediatric surgery having the shortest ( $278.2 \pm 146.81$  minutes). The Operative Phase accounted for a substantial proportion of the total time, emphasizing the need to optimize efficiency during this phase. Delays were identified at various stages of the surgical process, including patient entry, induction to incision, incision to closure, closure to wheel-out, and preparation for subsequent cases. Factors contributing to delays included delayed arrival of the anesthesia team, changes in induction medication, complications during surgery, logistical challenges, and staff delays in preparing the operating theatre.

## Conclusion:

This provides valuable insights into the duration of different phases and factors contributing to delays in the surgical process. The findings highlight the need for improved coordination, streamlined processes, and effective resource management to minimize delays and enhance overall efficiency. Addressing specific causes of delay, such as delayed arrival of the anesthesia team, changes in induction medication, complications during surgery, logistical challenges, and staff delays in preparing the operating theatre, can help optimize operation theatre utilization and improve patient flow. Implementing targeted interventions and strategies to address these factors can contribute to reduced delays, enhanced resource allocation, and improved surgical care outcomes.