“An Analysis of Operating Theatre Utilization: Identifying bottlenecks and drive efficiency”- A Quantitative Study at Wockhardt Hospital, Mumbai

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Wockhardt Hospital, located in Mumbai Central, Mumbai, is a leading chain of super-specialty hospitals in India, particularly known for its 35-year tradition of caring and innovation nurtured by Wockhardt Ltd, India’s 5th largest Pharmaceutical and Healthcare company with a presence in 20 countries across the globe. The hospital fulfills the need of the community in its chosen field of super specialty like Cardiology, Orthopedics, Neurology, Gastroenterology, Urology, Aesthetics and Minimal Access Surgery, Orthopaedics, Neurology, Oncology, Gastroenterology, Paediatrics, Urology, and Gynaecology. Accredited by the National Accreditation Board for Hospitals & Healthcare Providers (NABH) as well as JCI (Joint Commission International) which is the gold standard in the global healthcare community, Wockhardt group of hospitals in India has a quality-driven approach to deliver the best healthcare to all.

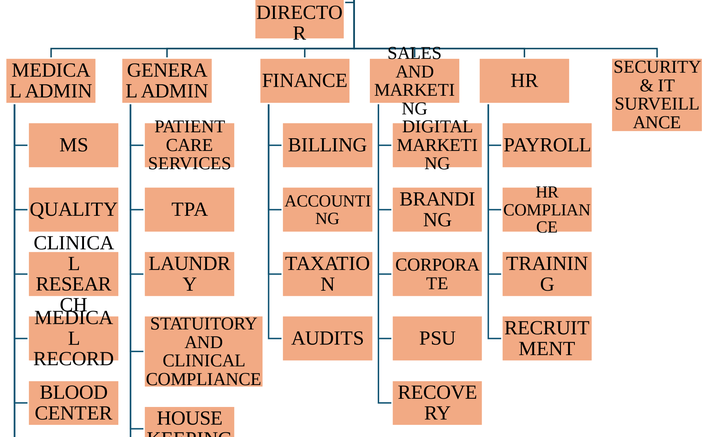
Vision

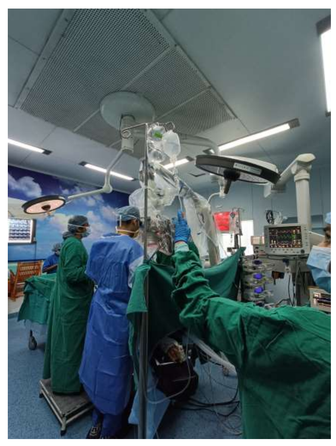
Wockhardt Hospitals aims to be a leader in providing high-quality medical treatment, continuously striving to meet the evolving needs of the community.

Mission

Wockhardt Hospitals aspire to set the benchmark for service standards in the healthcare industry, continuously improving and exceeding patient expectations.

ORGANOGRAM





STRENGTH

- Availability of an OT infrastructure.
- Availability of skilled OT staff including surgeons, anesthetists, nursing staff..
- Strong market reputation

WEAKNESS

- First Case On-Time Start Delays.
- Incoordination among staffs and departments.
- Long Turnaround Times due to delays in cleaning, sterilization, and setup between cases. Unexpected Events like Equipment failure, staff shortages affecting effective

OPPORTUNITIES

- Data Analytics & AI.
- Technology Adoption by investing in modern equipment, integrated scheduling software or real-time tracking systems can improve efficiency.

THREATS

- Increased competition drains patient footfall and surgical talent.

LEARNINGS DURING INTERNSHIP

- Improved teamwork and problem-solving skills through collaborative efforts.
- Developed effective verbal and non-verbal communication skills through extensive interaction with colleagues.
- Strengthened proficiency in accurate primary data collection, utilization of HMIS (Hospital Management Information Systems), and skills in data analysis.
- Participated in audits, gaining insights into JCI compliance requirements.

CHALLENGES FACED

- Overcoming communication barriers in a diverse team environment.
- Managing and resolving conflicts within a team setting.
- Ensuring accurate and timely data entry and collection in a fast-paced clinical environment.
- Adapting to updates and changes in HMIS software or technology.
- Addressing non-compliance issues during audits and implementing corrective actions.
- Developing and implementing effective strategies to address patient dissatisfaction and improve satisfaction scores.

THEORETICAL LEARNING

- Understanding of OT department management principles and adherence to .
- Knowledge of healthcare billing systems for various patient categories (CGHS, TPA, Cash, International Payments).
- Preparation for JCI audits and compliance with healthcare standards.
- Understanding medication and prescription error prevention strategies.
- Importance of organized Medical Record Department (MRD) filing systems.

Practical Exposure

- Implementation of dedicated OPDs and their operational challenges.
- Practical experience with different billing counters and patient categories.
- Hands-on experience with HMIS for patient care and administrative tasks.
- Participation in JCI audits and practical compliance actions.
- Organizing and managing files in MRD according to practical needs.

ABOUT THE PROJECT

Operating Theatre Utilization is a key metric that measures the percentage of scheduled time a surgical suite is actively used for patient procedures, assessing the efficiency of surgical scheduling, patient throughout, and the management of a critical hospital asset.

OBJECTIVES

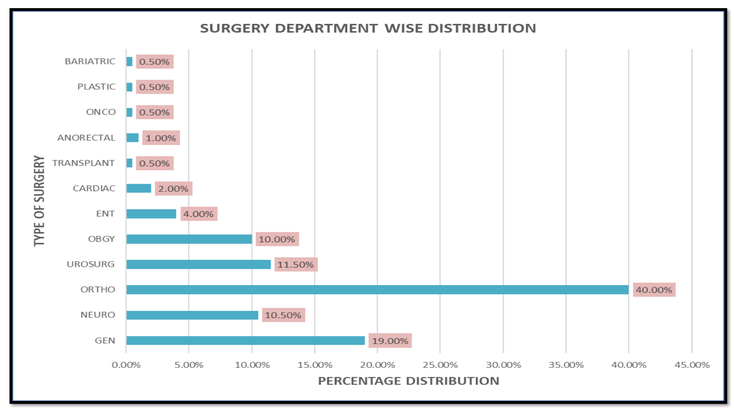
- To Analyze OT Utilization Rate.
- To analyze OT cleaning turnaround time.
- To identify bottlenecks and delays affecting effective OT Utilization.
- To recommend strategies to enhance process improvements.

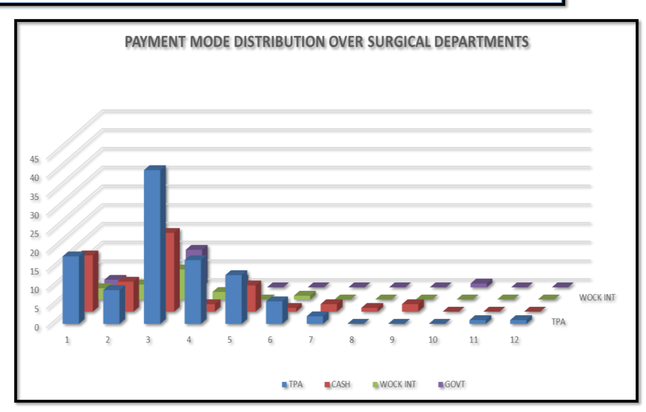
METHODOLOGY

- **Study Design:** Observational descriptive study of Operating Theatre Utilization and Efficiency in a Tertiary Care Setting, measured from the admission of the patient into OT to the completion of surgery.
- **Target Population:** Patients admitted for surgical management.
- **Sampling Technique:** Purposive sampling.
- **Sample Size:** 200 patients (May 21, 2025 - July 19, 2025).
- **Data Collection:** Primary data via observation.
- **Data Analysis:** Average admission turn-around time was 30.08 minutes.

RESULT

During the study period, a total of **348 cases** were scheduled, of which **200 cases** were observed. The majority of patients were female, accounting for **55.5%** of the sample. For these 200 cases, the mean Utilization Time was **137 minutes**, corresponding to an overall utilization rate of **20.68%.** The mean time spent on OT cleaning and sterilization process was **24 minutes**, where the reason for delay was found to be less work-force availability. Percentage of Surgeries Starting On Time were found to be **3.50%** with an Average Delay (For Late Starts) was **79.3 minutes** and the main reasons for this delay were Late patient /surgical staff arrivals, delay in equipment prep and setup and, due to old/ faulty equipments. Case Cancellation Rate was recorded to be **7.40%,** with the main reasons of cancellations to be pending TPA clearance, pending patient fitness clearance or patient medical emergencies.





1	GEN	7	CARDIAC
2	NEURO	8	TRANSPLANT
3	ORTHO	9	ANORECTAL
4	UROSURG	10	ONCO
5	OBGY	11	PLASTIC
6	ENT	12	BARIATRIC

RECOMENDATIONS

- Enforce a strict "First Case On-Time Start" (FCOTS) protocol to prevent cascading delays throughout the day.
- Deploy a real-time digital dashboard in the OT corridor to display the status of each theatre, enhancing visibility and patient flow management.
- Make OT efficiency metrics (like Turnaround Time and FCOTS rate) a formal Key Performance Indicator (KPI) for department heads.
- Use historical data to predict average case durations accurately, moving away from surgeon-based estimates.
- Provide surgeons with regular reports on their scheduling accuracy (planned vs. actual time) to encourage self-correction.
- Enhance community awareness of the hospital’s available surgical procedures and advanced surgical equipment through targeted marketing initiatives. This outreach will promote the hospital’s capabilities, attract more patients, and ultimately improve operating theater utilization..