THE NAIROBI WEST
HOSPITAL

Operation Theatre Utilization at The Nairobi West Hospital.

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Hospital Profile

- The Nairobi West Hospital is a Level 6B quaternary care facility located in Nairobi, Kenya.
- Established: 1980s; serving both local and international patients.
- Key Infrastructure: Multispecialty departments, advanced diagnostics and ultramodern helipad.
- Mission: Deliver accessible, affordable, and optimal healthcare with a patient-first philosophy.
- Vision: Achieve and maintain international standards while providing innovative and quality care across Africa.

Internship Overview

- **Duration**: 3 months (Full-time)
- **Department**: Operation Theatre, The Nairobi West Hospital.
- **Objective**: Apply theoretical knowledge to optimize surgical workflows, support quality improvement, and enhance overall OT efficiency.
- **Scope of Work**: Included data analysis, patient safety protocols, interdepartmental coordination, audit support, and process improvement initiatives.

Background

- Efficient OT utilization improves clinical outcomes and resource use.
- Challenges include delays, prolonged turnovers, cancellations, poor coordination.
- Low utilization increases healthcare costs and affects patient satisfaction.

Daily Activities

- Supervised and ensured timely patient transport and readiness for surgery.
- Cross-checked pre-op documentation for legal and clinical completeness.
- Observed surgeries across general, orthopedic, gynecology, and emergency cases.
- Liaised with the biomedical team to ensure readiness and calibration of surgical equipment.

Purpose and Aim

- Evaluate utilization of OTs in a Quaternary Care Hospital in Kenya.
- Aim to propose strategies for optimizing OT usage and management.

Objectives

- Primary:

- To Assess current OT utilization rate.

- Secondary:

- To Identify causes of inefficiencies and develop strategies.

- To Support safe, timely, and high-quality surgical care delivery.

Clinical and Financial Significance

- OT inefficiencies lead to delayed surgeries and clinical complications.
- Increased costs due to underutilization of high-resource areas.
- Optimizing OT workflows enhances safety, throughput, and revenue.

Factors Contributing to Inefficiencies

- Inaccurate scheduling and fixed department blocks.
- Prolonged turnover and setup times.
- Patient prep delays and last-minute cancellations.
- Communication gaps and outdated technology.

Methodology

- Prospective observational study over 60 days.
- Included surgeries in 5 OTs, both elective and emergency.
- Data from EHR, surgical logs, direct observation.

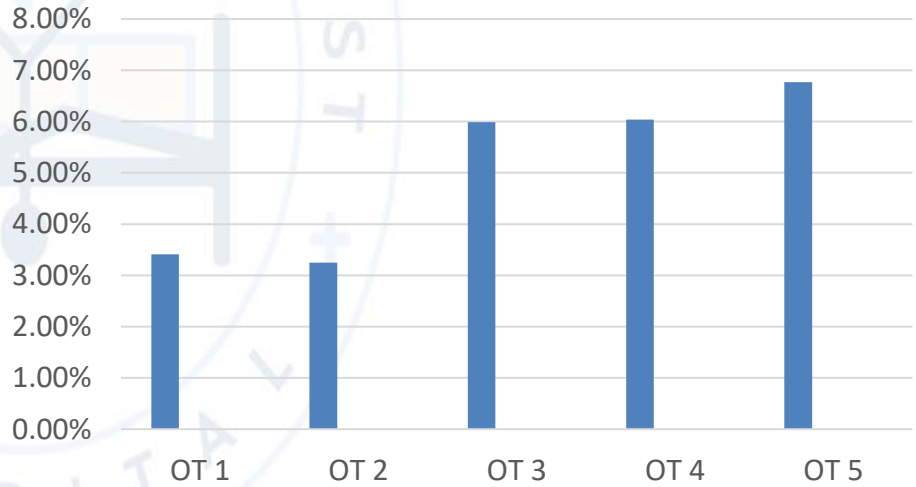
Operation Theatre Utilization: Case Volume Overview

- Total Cases (60 days): **791** surgeries across 5 OTs (10th Floor).
- Major Procedures: 392 cases (49.6%)
- Minor Procedures: 399 cases (50.4%)
- Insights:

- Balanced surgical case-load.
- Infrastructure accommodates both specialized and routine surgeries.

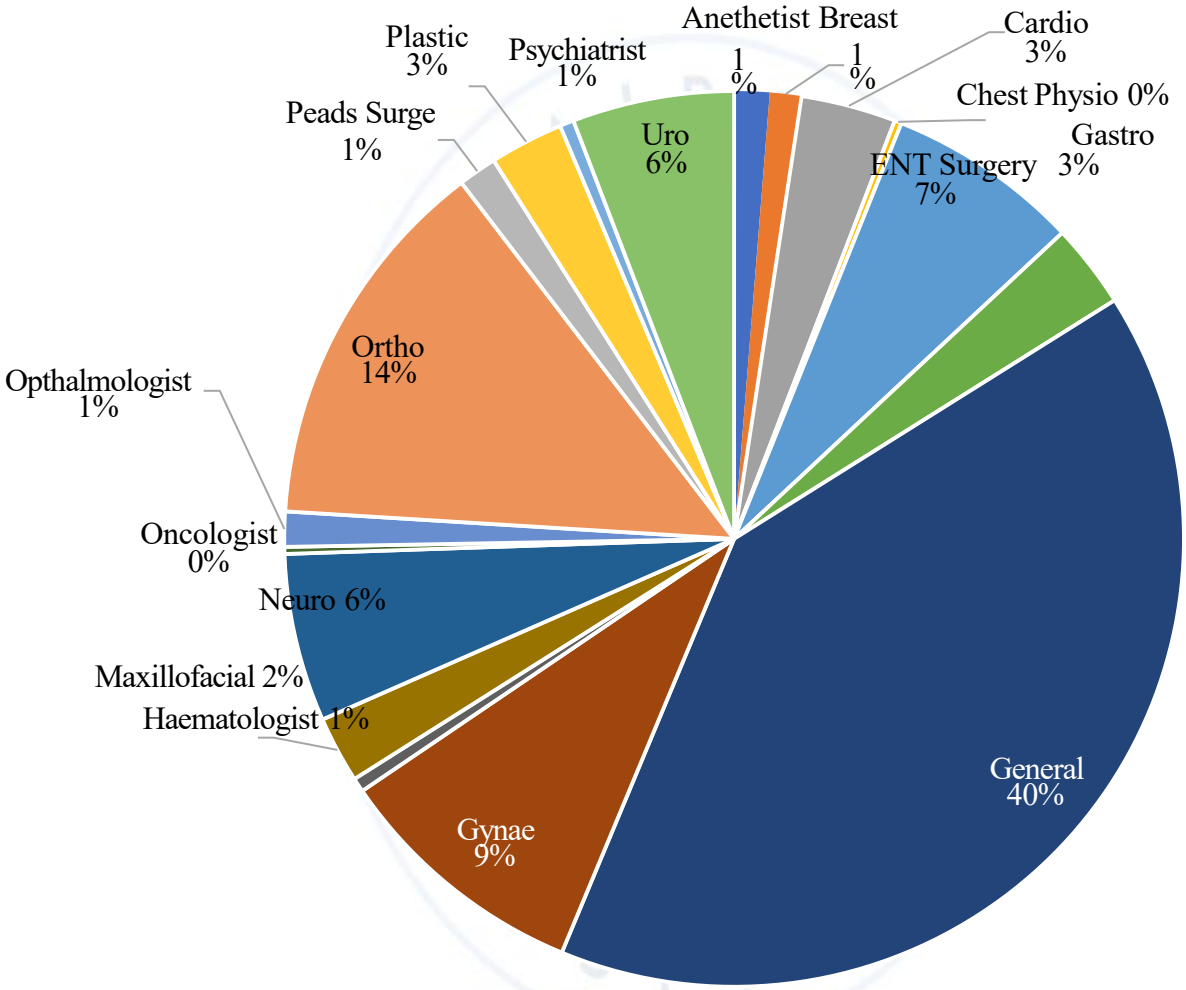
Operation Theatre Utilization: Efficiency Metrics

- Total Available OT Time (5 OTs over 60 days): 432,000 minutes (7200 hours).
- Total Time Used: 53,321 minutes (888.68 hours)
- Overall, OT Utilization Rate: 12.34%
- Utilization by OT:
  - OT1: 3.41%
  - OT2: 3.25%
  - OT3: 5.99%
  - OT4: 6.04%
  - OT5: 6.77%
- Interpretation:
  - Indicates systemic inefficiencies in scheduling, turnover time, and case forecasting.



Full distribution of surgical cases by department:

Department	No. of Cases
Anesthetist	10
Breast	9
Cardio	27
Chest Physio	2
ENT Surgery	55
Gastro	24
General Surgery	318
Gynecology	73
Haematologist	4
Maxillofacial	19
Neurosurgery	48
Oncologist	2
Ophthalmologist	10
Orthopaedics	108
Pediatric Surgery	11
Plastic Surgery	21
Psychiatrist	4
Urology	46
Total	791


Anethetist Breast 1%
Cardio 3%
Chest Physio 0%
Gastro 3%
ENT Surgery 7%
Uro 6%
Psychiatrist 1%
Plastic 3%
Peads Surge 1%
Ortho 14%
Opthalmologist 1%
Oncologist 0%
Neuro 6%
Maxillofacial 2%
Haematologist 1%
Gynae 9%
General 40%

Causes of Underutilization

- Poor planning, prolonged turnovers, equipment delays.
- Cancellations due to patient or staff issues.
- No real-time dynamic OT allocation.

Impact of Inefficiencies

- Delays in surgical access for patients.
- Lost revenue and increased cost per surgery.
- Staff burnout and loss of morale.

Gaps Identified

- **Capacity Utilization Gap:** OTs operated at only 12.34% capacity indicating inefficiency.
- **Limited Performance Monitoring:** Insufficient use of KPIs, timely feedback and performance accountability.
- **Bottlenecks in Scheduling:** Absence of predictive scheduling tools hindered optimal case sequencing and slot utilization.

SUGGESTIONS

- It is observed that the overall number of surgeries remains relatively low, which is affecting OT utilization.

- To enhance patient flow and improve utilization, I would like to suggest the following steps:

- Promotion of day-care surgeries with clear visibility of their prices both offline (in hospital premises) and online (website, social media).
- Active promotion of surgical packages on digital platforms for better reach and transparency.
- Promotion of value-added services, such as premium implant options (For internal purposes), to appeal to a broader range of patients.
- Sharing patient testimonials highlighting positive OT and surgical experiences to build trust and credibility.
- Offering special discounts to cash patients who refer others to our hospital, thereby encouraging word-of-mouth promotion.

Key Learnings

- **Clinical Skills:** Deep understanding of perioperative protocols, surgical team roles, and patient safety procedures.
- **Team Coordination & Support**: Experience in resolving team issues, supervising patient preparation, and aligning multiple surgical departments.
- **Data Analytics**: Hands-on experience with TAT measurement, and OT performance tracking.

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