

Introduction to Perioperative Theater

Introduction to Perioperative Theatre Technical Services

Technical Services

(Designed as a quick-reference guide for students, new staff, and anyone needing a concise overview.)

1. Scope & Definition

Term	Meaning
Perioperative	The period encompassing preoperative , intraoperative , and postoperative phases.
Theatre Technical Services	The team and systems that provide equipment, infrastructure, and support to ensure safe, efficient surgical care.
Goal	Deliver a sterile, well-maintained environment with reliable equipment, optimal workflow, and rapid response to emergencies.

2. Core Components of Theatre Technical Services

Component	Primary Functions	Key Responsibilities
Facilities & Infrastructure	Operating room (OR) layout, ventilation, lighting, power, gas supplies.	• Verify air-changes per hour (ACH) (e.g., 15 for clean rooms). • Maintain positive pressure & temperature (20-24°C).
Medical Equipment	Surgical tables, lights, anesthesia machines, monitors, electrosurgical units, imaging (C-arm, ultrasound).	• Daily checks (pre-use QC). • Calibration & preventive maintenance schedules.
Sterile Processing	Decontamination, cleaning, packaging, sterilization, storage of instruments.	• Follow OEM and national standards (e.g., ISO 13485, AAMI). • Track instrument sets via barcode/RFID.
Supply Chain & Inventory	Consumables (drugs, sutures, drapes), implant kits, disposables.	• Real-time stock monitoring. • Automatic re-order triggers.

Introduction to Perioperative Theater

Component	Primary Functions	Key Responsibilities
Information Technology	OR scheduling software, electronic health records (EHR), device integration, data capture.	• Ensure interoperability (HL7, DICOM). • Cybersecurity & backup. • Conduct regular drills & audits.
Safety & Compliance	Fire safety, radiation protection, electrical safety, infection control.	• Maintain documentation for accreditation.
Human Resources	Biomedical engineers, theatre technicians, sterile processing staff, logistics coordinators.	• Ongoing training (equipment updates, SOPs). • Competency assessment.

3. Workflow Overview (Pre?, In?, Post?operative)

3.1 Pre?operative Phase

1. Case Review & Scheduling

- Verify equipment & implant availability.
- Confirm room assignment based on procedure complexity.

2. Equipment Preparation

- Run daily **pre?use checklist** (lights, suction, alarms).
- Load required instrument sets and verify sterility tags.

3. Environmental Checks

- Confirm HVAC parameters, smoke evacuation, and lighting levels.
- Perform “**time?out**” safety verification (patient ID, site, procedure).

3.2 Intra?operative Phase

Activity

Technical Service Role

Introduction to Perioperative Theater

Patient Transfer	Ensure safe transport pathways; coordinate with anaesthesia team for monitoring equipment.
Setup	Position table, attach accessories, test imaging integration, verify gas lines.
During Surgery	Monitor equipment performance; replace consumables; troubleshoot alarms promptly.
Emergency Support	Rapid provision of backup equipment (e.g., spare ventilator, defibrillator).
Documentation	Log equipment usage, any malfunctions, and corrective actions in the OR logbook/EHR.

Technical Services

3.3 Postoperative Phase

- 1.