

Introduction to Perioperative Safety

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Key concepts, goals, and practical measures for ensuring patient safety before, during, and after surgery.

1. What Is Perioperative Safety?

Phase	Definition
Pre-operative	Activities from the decision to operate up to entry into the operating room (OR).
Intra-operative	All events that occur while the patient is on the surgical table, including anesthesia and the surgical procedure itself.
Post-operative	Care from transfer out of the OR to recovery and onward to the ward or discharge.

Overall goal: Prevent avoidable harm, reduce complications, and promote optimal outcomes for every surgical patient.

2. Core Safety Principles

Principle	Description	Example
Standardisation	Use of consistent, evidence-based protocols and checklists.	WHO Surgical Safety Checklist.
Teamwork & Communication	Clear, closed-loop communication among surgeons, anesthesiologists, nurses, and allied staff.	“Read-back” of medication doses.
Verification	Confirm patient identity, procedure, site, and implants before incision.	Time-out pause before skin incision.
Monitoring	Continuous physiologic monitoring and documentation.	Pulse oximetry, capnography, and invasive blood pressure.
Error Reporting & Learning	Non-punitive reporting systems to capture near-misses and adverse events.	Institutional morbidity/mortality conferences.

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Principle	Description	Example
Patient-Centred Care	Involve patients and families in decision-making and education.	Pre-admission counseling about anesthesia risks.

3. The WHO Surgical Safety Checklist (SSC)

Checklist Segment	Key Items
Sign-in (before anesthesia)	• Patient identity, procedure, surgical site confirmed • Allergies, airway concerns, risk of blood loss noted • Team introductions
Time-out (before incision)	• Confirmation of patient, procedure, site, and laterality • Antibiotic prophylaxis given within 60 min • Availability of essential imaging, equipment, and implants • Counts of sponges, needles, instruments
Sign-out (before patient leaves OR)	• Specimen labeling and documentation • Any intra-operative concerns communicated to recovery team

Implementation tip: Assign a dedicated “checklist champion” (often the circulating nurse) to lead each pause.

4. Pre-operative Safety Measures

1. Patient Identification & Verification

- Two independent identifiers (e.g., name + medical record number).
- Barcode wristband scanning where available.

2. Risk Assessment

- ASA physical status classification.
- Screening for obstructive sleep apnea, cardiac risk, anticoagulation status.

3. Medication Review

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- Hold or adjust anticoagulants, antiplatelet agents, insulin, etc.
- Verify allergy documentation.

4. Preoperative Optimization

- Smoking cessation, glucose control, anemia management.
- Prehabilitation (exercise, nutrition) for high-risk patients.

5. Informed Consent

- Discuss benefits, risks, alternatives, and postoperative expectations.
- Document patient questions and preferences.

5. Intraoperative Safety Measures

Area	Safety Strategies
Airway Management	• Use of video laryngoscopy for predicted difficult airway • Confirm end-tidal CO₂ waveform after