

Optimizing Operating Room Performance: Roles, Metrics, and Strategies for Achieving High-Performing Surgical Operations

The operating room (OR) is the heartbeat of surgical services—generating up to 65% of hospital revenue but also representing significant operational cost and complexity. Inefficiencies such as late starts, prolonged room turnovers, or same-day cancellations impact physicians, providers and staff morale, as well as erode financial performance. Achieving high-efficiency ORs requires coordination among surgeons, anesthesiologists, and the OR team, with a focus on data-driven process improvement and patient-centered planning.

Preoperative Evaluation: Foundation for OR Efficiency and Outcomes

Many same-day inefficiencies in the OR can be traced back to incomplete or inconsistent preoperative evaluation. The following elements should be standardized and documented in the pre-operative evaluation phase:

- **Medical History and Comorbidity Risk:** Address cardiopulmonary status, diabetes, anticoagulant use, sleep apnea, frailty
- **Medication Management Plan:** Adjusts for insulin, antiplatelets, or herbal supplements
- **Airway and Anesthesia Risk Assessment:** Identify and plan for challenging airways or high ASA scores
- **Social Support and Discharge Planning:** Plan for same-day discharges or rapid recovery pathways
- **Infection Risk Screening:** Screen for MRSA, smoking status, pre-operative blood sugar control
- **Functional Status Evaluation:** Determine recovery expectations and likelihood of complications
- **Advance Directives and Informed Consent:** Clarify goals of care and avoid day-of-surgery delays
- **Coordinated Communication and Planning:** Integrate surgical episode planning with the Anesthesia provider, surgeon, and OR team

Integrating pre-operative clinics and automated screening protocols improve surgical readiness and dramatically reduce same-day cancellations and enhance postsurgical recovery.

Key Roles in an Efficient OR Ecosystem

1. Surgeons

Surgeons impact efficiency through timely case starts, accurate block time management, and standardized surgical protocols. High-performing surgeons embrace lean workflows, actively participate in huddles, and champion OR efficiency initiatives.

2. Anesthesia Providers

Anesthesiologists and CRNAs accelerate throughput by utilizing preoperative blocks, on-time induction, and rapid emergence protocols. They also lead Enhanced Recovery After Surgery (ERAS) initiatives that improve outcomes and reduce length-of-stay. Often times, an anesthesia physician leader will lead the surgical service governance committee, working directly with their surgical colleagues and anesthesia partners.

3. OR Nursing and Support Teams

Experienced OR nurses and OR leaders ensure case readiness, minimize turnover, and enforce safety protocols. Best-in-class ORs deploy consistent team assignments, real-time case tracking, and play an active role in pre-operative evaluations to ensure effective communication with their OR team, surgeons, and anesthesia provider.

Top 10 OR Efficiency Metrics

Below are the 10 most impactful metrics to monitor, along with benchmark performance targets for high-performing hospital systems and ambulatory surgery centers (ASCs) (ASCs):

Metric	Definition	Better Performing Benchmark*
1. First Case On-Time Start Rate	Percentage of first daily cases starting on time	≥ 90%
2. Turnover Time	Time between one patient exiting and next incision	≤ 20 minutes (ASC); ≤ 30 minutes (Hospital OR)
3. Case Duration Accuracy	Variance between scheduled and actual case time	≤ ±15% variance
4. Room Utilization Rate	Percentage of scheduled OR time used for cases	≥ 85%
5. Case Cancellation Rate (Day-of-Surgery)	Same-day cancellations per scheduled cases	≤ 2%
6. Day-of-Surgery Delay Minutes	Cumulative minutes delayed per day	≤ 10 minutes per OR per day
7. Anesthesia Ready Time	Time from patient in-room to anesthesia ready	≤ 10 minutes
8. Block Time Utilization	Allocated OR surgeon time actually used for patient care activities (cut-to-close, setup, and turnover)	Hospital-based ORs >80% ASC-based ORs >85%
9. Staffed Room Utilization	Percentage of actual usage to available surgical capacity	Hospital-based ORs 75%-80% ASC-based ORs 80%-85%
10. Surgical Site Infection Rate	Infections per 100 cases	≤ 0.5%

Final Thoughts

Optimizing OR efficiency is not a one-time project—it is a culture of precision, coordination, and continual improvement. Better performing ORs combine data transparency, team engagement, governance, and standardization across the surgical episode. By aligning clinical roles with measurable goals, and ensuring patients are fully optimized before they even enter the OR, hospitals and ASCs can drive significant financial performance, provider satisfaction and high-quality care.

*Sources:

- American College of Surgeons – National Surgical Quality Improvement Program (ACS NSQIP)
- Association of perioperative Registered Nurses (AORN)
- Anesthesia Quality Institute (AQI) / National Anesthesia Clinical Outcomes Registry (NACOR)
- The Advisory Board Company