AJCHOR
Avicenna Journal of Care and Health in Operating Room
Avicenna J Care Health Oper Room 2025;3(3):85-86. doi:10.34172/ajchor.124
https://ajchor.umsha.ac.ir

Editorial

Patient Safety in the Operating Room: A Collective Commitment

Behzad Imani[1*]

[1]Department of Operating Room, School of Paramedicine, Hamadan University of Medical Sciences, Hamadan, Iran

***Corresponding author:** Behzad Imani, Email: behzadiman@yahoo.com

Please cite this article as follows: Imani B. Patient safety in the operating room: a collective commitment. Avicenna J Care Health Oper Room 2025;3(3):85-86. doi:10.34172/ajchor.124

Received: August 21, 2025, **Revised:** September 26, 2025, **Accepted:** October 4, 2025, **ePublished:** October 28, 2025

Introduction

The operating room (OR), as the core of many medical centers, is a dynamic, complex, and high-risk critical environment. Within this setting, patients are in an extremely vulnerable condition, where even minor errors or oversights may lead to irreversible consequences. Patient safety in the OR is not merely about the successful performance of a surgical procedure; it encompasses a comprehensive and systematic process that begins with the decision to perform surgery and continues through postoperative recovery and discharge. This letter aims to examine the significance of patient safety in the operating room, highlight its challenges, and discuss key strategies for improvement (1).

Main Challenges to Patient Safety in the Operating Room

1. Human and Communication Errors

Incorrect or incomplete communication among surgical team members remains a leading cause of adverse events. Miscommunication regarding the type of surgery, operative site, patient history, or allergies can result in catastrophic outcomes.

2. Anesthesia-Related Issues

Errors in the calculation or administration of anesthetic agents, failures in monitoring equipment, and inadequate airway management pose significant threats to patient safety

3. Surgical Site Infections (SSIs)

Non-adherence to sterile protocols, suboptimal ventilation systems, and inappropriate antibiotic prophylaxis can increase the risk of surgical site infections.

4. Wrong-Site, Wrong-Side, and Wrong-Patient Surgery

Although relatively rare, performing surgery on the incorrect body site, side, or patient represents some of the most severe medical errors.

5. Retained Surgical Items

Leaving sponges, gauze, or surgical instruments inside the patient's body can cause serious complications.

6. Equipment-Related Hazards

Technical malfunctions of devices, inadequate availability of essential equipment, or their improper use can significantly compromise patient safety.

7. Fatigue and Workload Pressure on the Surgical Team

Prolonged working hours and sustained psychological stress can substantially impair the team's focus and performance (2).

Strategic Solutions for Enhancing Safety

1. Consistent and Rigorous Implementation of the WHO Surgical Safety Checklist

This simple yet highly effective tool, implemented at three critical stages (before anesthesia induction, before skin incision, and before the patient leaves the OR, improves communication and prevents numerous errors through systematic verification of essential clinical information.

2. Promoting a Culture of Safety and Non-Hierarchical Communication

Fostering an environment where any team members, from the least to the most experienced, can express safety concerns without fear of reprimand is essential. Conducting structured, non-judgmental debriefing

sessions following operations is crucial (3).

3. Continuous Training and Simulation

Utilizing simulation-based training to prepare teams for the management of critical events (e.g., severe hemorrhage or intraoperative cardiac arrest) enables skill development and crisis management practice without jeopardizing a real patient.

4. Standardization of Processes

Developing and implementing clear, evidence-based protocols for all stages, from patient preparation and appropriate antibiotic prophylaxis to instrument counts and postoperative pain management, strengthens patient safety.

5. Assistive Technologies

Implementing barcode scanning systems to ensure accurate patient and procedure matching, OR management software, and advanced real-time physiological monitoring equipment can substantially enhance precision and efficiency in the OR.

6. Managing Human Factors

Paying close attention to ergonomic OR design, reducing environmental distractions, and optimizing work schedules are essential strategies for mitigating fatigue and improving team performance.

7. Systematic Error Reporting and Analysis

Establishing a voluntary and confidential reporting system for errors and near misses facilitates root cause analysis and promotes organizational learning, with an emphasis on system-level improvement rather than individual blame (4).

Conclusion

Patient safety in the OR is not an option; it is a fundamental ethical and professional imperative. Achieving a truly safe environment requires collective commitment, sustained investment in training and technology, and, most importantly, a shift in mindset toward recognizing the healthcare system— rather than individual practitioners alone— as responsible for monitoring and error prevention. This commitment must start from the senior management level of the hospital and be consistently reflected in the daily practices of every member of the surgical team. Safety should remain the foremost priority in every procedure, every day. Patients entrust their lives and well-being to healthcare professionals; therefore, they deserves the highest standard of care and professional diligence.

Competing Interests
None.

Ethical Approval
Not applicable.

Funding
None.

References

1. Ghareebi M, Rahmanyan R, Neshati A. Investigating the Level of Awareness of Patient Safety Culture among Operating Room Personnel. Paper presented at a conference. 2021.
2. Imani B., Mousavi E. Patient safety culture and spiritual health in the operating room: an Iranian exploratory qualitative study. J Relig Health. 2023;62(4):2359-74. doi: 10.1007/s10943-022-01531-7
3. Memaryan N, Ghaempanah Z, Aghababaei N, Koenig HG. Integration of spiritual care in hospital care system in Iran. J Relig Health. 2020;59(1):82-95. doi: 10.1007/s10943-019-00864-0
4. de Bernardin Gonçalves JP, Lucchetti G, Menezes PR, Vallada H. Complementary religious and spiritual interventions in physical health and quality of life: a systematic review of randomized controlled clinical trials. PLoS One. 2017;12(10):e0186539. doi: 10.1371/journal.pone.0186539