ORIGINAL RESEARCH PAPER

Medical Science

FROM CHECKLISTS TO LIFESAVERS: ENHANCING PATIENT SAFETY THROUGH SURGICAL SAFETY PROTOCOLS

KEY WORDS: Surgical Safety Checklist, patient safety, adverse events, surgical site infections, WHO guidelines, perioperative care, safety culture

Mohd Sarwar Mir Assistant Professor, Hospital Adminstration And Assistant Medical Superintendent, GMC Handwara

Ruksana Hamid Medical Officer, Anesthesia, JK Health And Medical Education Department.

ABSTRACT

Patient safety is a critical aspect of healthcare, particularly in surgical settings where the risk of adverse events is high. The Surgical Safety Checklist (SSC), introduced by the World Health Organization (WHO) in 2008, is designed to minimize these risks by enhancing communication, standardizing safety measures, and ensuring procedural adherence. This study evaluates the implementation and impact of the SSC on surgical outcomes and patient safety in a tertiary care hospital. A total of 200 surgical cases were analyzed, with 100 cases each in pre- and post-implementation phases. Key parameters included surgical site infections (SSIs), anesthesia-related complications, wrong-site surgeries, and overall patient outcomes. Results demonstrated a significant reduction in adverse events, with SSIs decreasing from 8% to 3% and anesthesia-related complications dropping from 5% to 1%. Compliance with the SSC improved steadily, reaching 92% by the end of the study period. Team communication also improved, as evidenced by a 40% increase in survey scores on coordination and situational awareness. These findings highlight the transformative potential of the SSC in fostering a safer surgical environment. However, challenges such as hierarchical resistance and time constraints were identified, necessitating targeted interventions for sustained success.

INTRODUCTION

Surgical care is integral to healthcare systems worldwide, with millions of procedures performed annually. However, the inherent risks associated with surgery, including infections, anesthesia complications, and procedural errors, underscore the critical need for robust safety measures. According to the WHO, nearly 234 million surgeries are performed globally each year, and 7 million patients experience complications, with at least 1 million of these resulting in preventable deaths.

The WHO introduced the SSC in 2008 as part of its "Safe Surgery Saves Lives" campaign, aiming to address these challenges. The checklist comprises three phases:

1. **Sign-in:** Conducted before anaesthesia induction to confirm patient identity, surgical site, and equipment availability.
2. **Time-out:** Conducted before the skin incision to ensure role clarity, discuss critical events, and verify procedural requirements.
3. **Sign-out:** Conducted before the patient leaves the operating room, focusing on specimen labeling, instrument counts, and postoperative care plans.

While numerous studies have validated the SSC's efficacy, its implementation often faces barriers such as resistance to change, time constraints, and variability in adherence. This study evaluates the SSC's impact on patient safety in a tertiary care hospital, identifying both successes and challenges.

MATERIALS AND METHODS

Study Design:

A prospective observational study was conducted over 12 months in a tertiary care hospital. The study was divided into two phases:

1. **Pre-implementation phase (6 months):** Baseline data were collected on surgical outcomes and team communication.
2. **Post-implementation phase (6 months):** The SSC was introduced, and its impact was assessed.

Study Population:

Inclusion Criteria: Patients undergoing elective or emergency surgeries, aged ≥18 years.

Exclusion Criteria: Day-care surgeries and minor procedures not requiring general anesthesia.

A total of 200 patients were included, with 100 in each phase.

Implementation Process:

1. **Training Sessions:** Comprehensive workshops for surgical teams focused on SSC components and objectives.
2. **Pilot Testing:** The SSC was tested in 10 surgeries to identify and address logistical challenges.
3. **Integration:** The checklist was incorporated into standard operating room protocols.

Data Collection:

Adverse events such as SSIs, anesthesia complications, and wrong-site surgeries were recorded. A Likert scale-based survey assessed team communication and safety culture. Compliance with the SSC was monitored through direct observation.

Data Analysis:

Continuous variables were analyzed using paired t-tests, while categorical variables were analyzed using chi-square tests. A p-value <0.05 was considered statistically significant.

RESULTS

Patient Demographics

The median age of patients was 45 years (range: 18–75), with a male-to-female ratio of 1.2:1. Elective surgeries accounted for 70% of cases, while emergency procedures comprised the remaining 30%.

Reduction In Adverse Events:

Surgical Site Infections (SSIs): Decreased from 8% in the pre-implementation phase to 3% post-implementation.

Anesthesia-Related Complications: Dropped from 5% to 1%, with notable reductions in hypoxia and medication errors.

Wrong-site Surgeries: No incidents were reported post-implementation.

Checklist Compliance:

Compliance improved from 65% in the first month of implementation to 92% by the final month. Reasons for non-compliance included time constraints (30%) and resistance from senior staff (20%).

Team Communication:

Survey results revealed a 40% improvement in perceived team communication and coordination. Surgical teams reported greater clarity in roles and responsibilities during procedures.

DISCUSSION

The study highlights the SSC's effectiveness in reducing adverse surgical events and enhancing team communication. The observed reductions in SSIs and anesthesia complications are consistent with findings from Haynes et al. (2009), which reported a 36% reduction in postoperative complications following SSC implementation.

Key Factors Contributing To Success Included:

1. **Training And Education:** Workshops addressed knowledge gaps and built consensus among team members.
2. **Pilot Testing:** Allowed identification of logistical barriers, facilitating smoother integration.
3. **Leadership Support:** Engagement from senior staff played a crucial role in fostering adherence.

However, challenges such as hierarchical resistance and time constraints mirrored those reported in resource-limited settings (Alhassan et al., 2018). Addressing these barriers requires sustained institutional commitment, periodic training, and leveraging digital tools for checklist management.

SUMMARY AND CONCLUSIONS

The SSC significantly improved surgical outcomes and safety culture in the study setting. Key benefits included reductions in SSIs and anesthesia complications and enhanced team communication. Despite initial challenges, adherence rates improved with targeted interventions, underscoring the checklist's potential as a transformative tool in patient safety.

Recommendations

1. **Mandatory Training:** Regular workshops for surgical teams to reinforce checklist adherence.
2. **Continuous Monitoring:** Periodic audits to identify and address gaps in compliance.
3. **Technology Integration:** Adoption of digital platforms to streamline checklist use and documentation.
4. **Leadership Engagement:** Active involvement of senior staff to promote a culture of safety.

REFERENCES

1. Haynes AB, Weiser TG, Berry WR, et al. A surgical safety checklist to reduce morbidity and mortality in a global population. N Engl J Med. 2009;360(5):491-499.
2. Gawande A. The checklist manifesto: how to get things right. Metropolitan Books. 2010.
3. Alhassan RK, Ofosu A, Aberese-Ako M, et al. Implementation challenges of surgical safety checklists in resource-constrained settings. BMC Health Serv Res. 2018;18(1):1-9.
4. Weiser TG, Haynes AB, Dziekan G, et al. Effect of a 19-item surgical safety checklist during urgent operations in a global patient population. Ann Surg. 2010;251(5):976-980.