

Authors

Samantha Jolly
MBBS, MSurg, MCLinEd
University of Adelaide

Andrea J Carrick
BSN, PGC, RN
Flinders Medical Centre

Corresponding author

Samantha Jolly
MBBS, MSurg, MCLinEd
University of Adelaide

Improving communication components of the surgical safety checklist in the perioperative setting

Abstract

Effective communication between members of the health care team and patients is essential for providing safe and consistent care. Despite this, communication errors continue to occur, being involved in over 70 per cent of sentinel events and contributing to patient morbidity and mortality. Standardised frameworks exist to guide structured communication, with the surgical safety checklist used in the perioperative setting to improve patient safety and teamwork. However, the elements which facilitate interdisciplinary communication are those most commonly overlooked. Continual auditing and critical evaluation are necessary to ensure workplace communication frameworks are implemented in a manner that aligns with service delivery and provides optimal patient outcomes. This paper describes the communication components of and evidence behind the surgical safety checklist, the commonly experienced challenges implementing it in the workplace and strategies to improve compliance in the clinical setting.

Keywords: surgical safety checklist, teamwork and communication, clinical governance, framework

Introduction

Effective communication is vital for the provision of safe, high quality patient care¹. It is known that poor communication is a leading cause of preventable medical error, implicated in over 70 per cent of sentinel events, and associated with a higher risk-adjusted patient mortality^{2,3}. One study found that communication errors occurred in approximately one third of team exchanges in the operating theatre, with a further third of those jeopardising patient safety⁴.

To mitigate this, standardised frameworks exist to promote multidisciplinary communication and increase teamwork while reducing risk⁵. This is particularly important in the operating theatre¹, with the surgical safety checklist (SSC) being an important aspect of perioperative

clinical practice. Clinical governance is the process through which health organisations ensure good clinical outcomes by partnering with clinicians, consumers, health organisations and other stakeholders⁶. This is supported by frameworks such as the SSC, which allow for a consistent approach to build collaborative working relationships with the goal of patient safety, clinical effectiveness and quality improvement⁶.

Discussion

Surgical safety checklist

The SSC is a 19-item tool published by the World Health Organisation (WHO) in 2008 to improve teamwork and patient safety⁷. The SSC is a structured communication process which requires multidisciplinary participation and sharing of critical

information between perioperative nurses, surgeons and anaesthetists⁵. It is structured in three sections based on three phases of the operation: the 'sign in' section applies to the phase before induction of anaesthesia, the 'time out' section applies to the phase after induction and before skin incision, and the 'sign out' section applies to the phase from wound closure to when the patient leaves the operating theatre⁷.

Each section has a component that focusses on communication. The sign in section begins with communication with the patient to confirm their identity, the operative site, the planned procedure and their consent, as well as providing an opportunity for the patient to ask questions and communicate any concerns⁷. The time out section includes all team members introducing themselves and their role, and the surgical team, anaesthetic team and nursing team discussing any anticipated critical events⁷. This team-building process is crucial, providing an environment where members feel included and comfortable expressing concerns, and promotes trust⁸. Finally, the sign out section of the checklist involves communication between the surgeon, anaesthetist and nurse about any concerns for recovery, which facilitates appropriate handover to recovery staff and the ongoing management of the patient.

The SSC has been widely endorsed by key governing bodies, beginning with the Australian Commission on Safety and Quality in Health Care (ACSQHC) in 2009⁹. The Royal Australasian College of Surgeons (RACS) endorses the SSC as a 'minimum standard' for safe surgical care, noting a reduction in communication failures by two-thirds following its implementation¹⁰. The Australian College of Perioperative

Nurses (ACORN) endorses the use of the SSC for all procedures to improve patient safety and foster team communication¹¹. Finally, the Australian and New Zealand College of Anaesthetists (ANZCA) have included adherence to the SSC with pre- and post-operative huddles in their perioperative care framework¹². Level 2a evidence demonstrates that SSC implementation results in reduced complications and mortality, and improved communication^{13,14}; however, despite this wide endorsement and evidence of benefit, compliance with and participation in the SSC is suboptimal⁸. Given the potential impact to patient safety, this demonstrates the clear need for improvement in clinical practice.

Best practice

The WHO SSC Implementation Manual¹⁵ clearly delineates how to implement the SSC according to best practice. Every item must be confirmed and verified by the entire team rather than relying on memory⁷. Adaptation of the checklist to conform to normal operative workflow is encouraged to ensure maximum compliance; however, pauses must still occur to complete the sign in, time out and sign out sections. Ideally, a checklist coordinator, such as a circulating nurse, would guide this process and prevent progression until all items are reasonably addressed. In addition, best practice involves appropriate documentation and auditing to improve adherence to safe standards, and these are an important component of clinical governance^{7,9}.

Despite clear processes, several deviations from best practice have been identified when workplace implementation of the SSC is studied. These deviations are broadly categorised into lack of

engagement, non-compliance with introductions and debriefing, and insufficient auditing. Contributing factors include misperceptions of importance, perceived time delays, inadequate education to address obstacles, duplication of work, uncertainty regarding roles and poor leadership and accountability¹⁶. It is important to identify these specific areas of concern to target quality improvement initiatives¹⁷.

Workplace challenges

When comparing best practice with workplace practice, the first concern is lack of engagement from all team members. The entire team – nurses, surgeons and anaesthetists – should actively participate in each of the three sections of the checklist and stop all other activity during this time⁷. A multicentre prospective cross-sectional study found team members to be absent in more than 40 per cent of cases¹⁸.

Another challenge to SSC implementation is different attitudes of team members. Studies have found that nurses value and participate in the SSC far more than other staff members but are limited by feeling undervalued by colleagues^{5,16}. Conversely, anaesthetists have been found to express the least positive attitude toward the SSC, citing lower perceived usefulness given overlap with existing anaesthetic checks and that the SSC occurs during a period of high workload^{16,19}. Surgeon attitudes relate to perceived time constraints, duplication, loss of autonomy and poor understanding of benefits extending to teamwork and collaboration¹³. Despite this, 90 per cent of physicians still desired the SSC to be used on themselves if they were undergoing surgery, thus demonstrating a deeper acknowledgement of the safety benefits¹³.

Perceptions of risk can also create challenges to ideal SSC implementation. Team member introductions must occur as part of the time out section of the checklist for every surgical procedure, even when a procedure is later in an operative day and team members have been working together previously. Pre-operative team briefing to discuss critical issues, and post-operative team debriefing to discuss any problems are crucial for communication and, along with team introductions, also constitute best practice. Team introductions and briefings are often poorly executed compared to other checklist items, possibly reflecting team members perceptions of 'risk'⁸. For example, the 'antibiotic prophylaxis' and 'confirmation of patient details' items of the checklist relate to avoiding direct risk and are routinely performed, while team member introductions facilitate communication and mitigate indirect risk and are least consistently performed⁸.

Improvement avenues

Given a considerable number of deviations from best practice relate to misperceptions, education and training is a key avenue of improvement to target, as well as being a pillar of clinical governance. As evidence-based professions, physicians and nurses should be educated regarding the purpose of and evidence behind the SSC and its role in situational awareness, communication and hospital-specific workplace processes such as timing of pauses throughout the perioperative period. Misconceptions, such as the commonly held belief that the SSC causes time delays, must be addressed. Studies have demonstrated clinical efficiency and effectiveness by reducing delays through minimising confusion

and miscommunication, another component of clinical governance²⁰.

A further area of improvement is multidisciplinary engagement. Cultivating enthusiasm requires stakeholder leadership, a change in safety culture which may require a short-term local champion during the transition period, and buy-in from nursing, surgical and anaesthetic disciplines²⁰. Finally, practices must be reviewed to ensure the SSC does not duplicate other surgical and anaesthetic checks, its relevance is maintained and its implementation aligns with evolving surgical practice¹⁴.

Implementation of teaching and education is most successful when it occurs through a multimodal approach. Short teaching sessions, such as 'fast talks', concise 15-minute practical teaching sessions, have the benefit of fitting into daily work routines and can occur during previously designated educational sessions³. Nominating a nurse team leader can help with instruction of correct practices and encourage participation, particularly in areas of introductions and debriefing. Visible senior leadership is critical for implementing teamwork initiatives in health care, thus having senior support through 'safety leadership walkarounds' can help to encourage consistent compliance²⁰.

One-off training programs have limited durability, thus continued reinforcement is necessary, ideally through local champions²⁰. Concept posters in the operating room, such as those used for scrubbing protocols, also reinforce previous teaching and provide reminders throughout the day³.

Another strategy that has been suggested to improve checklist performance is presenting the SSC on a whiteboard with each checklist item being crossed off when it is

completed, rather than one person ticking a paper checklist. This can help to improve shared team ownership of the checklist²¹. In addition, the 'theatre cap challenge' where each team member's name and role is written on surgical headwear, has been used to improve knowledge and retention of team members within the theatre²².

Prospective observational auditing is important for data integrity, and has been shown to improve compliance from 3.5 to 63 per cent²¹. Furthermore, this allows for ongoing review of processes to ensure improvement. A mechanism for employees to provide feedback is essential to facilitate ongoing improvement, e.g. a whiteboard in theatre allowing the opportunity to provide timely, anonymous and informal feedback²¹.

Conclusion

Widespread endorsement and implementation of the SSC has resulted in considerable improvements in operating staff communication and patient safety¹⁴. This benefit is most pronounced when each element of the checklist is appropriately implemented; however, studies have found that elements are overlooked, most commonly those that facilitate interdisciplinary communication⁸. This is partly due to commonly held misperceptions, poor knowledge of the purpose of and evidence behind the SSC, and lack of enforced workplace processes targeted at ongoing engagement and compliance with the SSC. Improvements can occur through regular structured teaching, local champions, leadership walkarounds, posters and whiteboard checklists. Prospective auditing has the dual role of assessing the impact of the intervention and

improving compliance with this important communication process in the operating theatre. The SSC is an important aspect of clinical practice and is relevant to areas of clinical governance in the perioperative setting.

Competing interests

The authors have declared no competing interests.

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