An Overview of the Surgical Safety Checklist Compliance and its Common Pitfalls in Providence Health Care

Nima Moghaddam[1], Meghan MacLeod , Trina Montemurro[1,2] MD

[1] Vancouver Fraser Medical Program, University of British Columbia, Vancouver, Canada; [2] Department of Anaesthesia, Providence Health Care, Vancouver, Canada

Background

- In 2008, the World Health Organization (WHO) developed the Safe Surgery Save Lives Checklist in hopes of improving patients' safety during surgeries and minimizing injurious operative errors [1]. Several studies since then have confirmed the importance of safety checklists in surgical care.
- Safety checklists employed during perioperative period have shown to provide a platform for better communication amongst team members, reduce the incidence of post-operative complications, and even decrease the number of wrong-sided surgeries [2].
- However, cultural attitudes toward safety checklists have not always been positive. Many health care providers see the checklist as redundant and waste of time, dismissing its critical role in optimizing safety of surgical patients [3].
- With the mounting evidence for its effectiveness, surgical checklists have gained a wider acceptance throughout the OR culture. Therefore, many hospitals around the world have adopted the surgical safety checklists [3]

Introduction

- At Providence Health Care, a customized checklist has been developed that includes most of the relevant safety items that are encountered in our surgical suites.
- It is comprised of three phases: Briefing, Timeout, and Debriefing.
- For all the three phases, *the surgeon, the anesthesiologist, and the nurse(s)* need to be present in the OR. (The only exception to this is that the briefing can be done without the surgeon only if he/she delegated it to another OR member at the beginning of the day)

Briefing (before anesthesia induction)	Timeout (before first incision)	Debriefing (before patient leaves room)
❑ Preoperative Patient Checklist completed ❑ Staff sign-in (1st case of the day) ❑ Anesthesia - Machine safety checks - Difficult airway - Extra monitoring: TEE, CVP, arterial line, regional anesthetic ❑ Patient-specific concerns communicated ❑ Are antibiotics needed? ❑ Are SCDs needed? ❑ Warming devices needed? ❑ Instruments and equipment available ❑ Implants	❑ Patient information confirmed - Identification - Allergies - Site/side marking - Surgical consent - Procedure - Blood consent; type and screen ❑ Patient-specific concerns identified ❑ solation precautions ❑ Blood products needed & available ❑ Positioning of patient ❑ VTE prophylaxis - Mechanical - Pharmacological ❑ Essential imaging available - Intraoperative - Fluoroscopy ❑ Implants available ❑ Antibiotic prophylaxis end time?	❑ Surgical procedure verified ❑ Surgical count correct ❑ Specimen verified ❑ Equipment problems identified ❑ Wound classification ❑ Foley catheter removed?

Methods

- The data were collected in the operating rooms and the surgical procedure rooms of St. Paul's Hospital and Mount Saint Joseph Hospital.
- Overall, 128 surgeries were audited in the span of eight weeks.

Statistical Analysis:

- Five different variables were studied in the audited surgeries:
  - Documenting whether each phase of the checklist was completed or not
  - Evaluating whether each phase occurred as a formal pause at the appropriate time
  - Verifying if all relevant items were addressed or whether some items were neglected
  - Documenting whether all surgical staff were present during the checklist completion
  - Recording cases where there was a good catch during the checklist completion

(N.B. A good catch included a wide range of items from having the wrong patient or performing the incorrect procedure, to forgetting the antibiotic prophylaxis or essential equipment.)

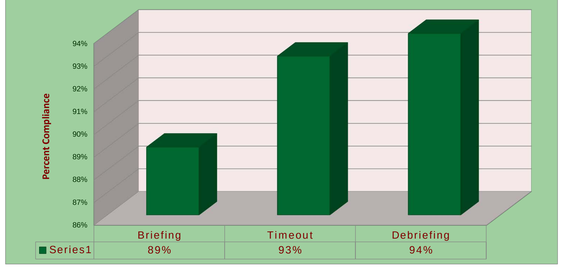
- The data were further analyzed based on the surgical service provided. In total, eight different types of surgeries were audited and compared to each other.

Results I

Table 1. Surgical Safety Checklist Compliance rates broken down by individual phases and different services

Service	# of patients	# of patients with briefing completed	# of patients with time out completed	# of patients with debriefing completed	# of Patient with all 3 completed
CARDIAC	4	75%	100%	75%	75%
GENERAL	28	93%	100%	100%	93%
GYNECOLOGY	18	89%	100%	89%	78%
ORTHOPEDIC	29	93%	100%	93%	86%
OTOLARYNGOLOGY	11	73%	91%	82%	73%
PLASTIC	19	100%	100%	100%	100%
UROLOGY	12	100%	100%	100%	100%
VASCULAR	7	86%	100%	100%	86%
Grand Total	**128**	**89%**	**99%**	**92%**	**86%**

Figure 1. Did the phase occur as a Formal Pause at the appropriate time?



Results II

Figure 2. Were all relevant items addressed?

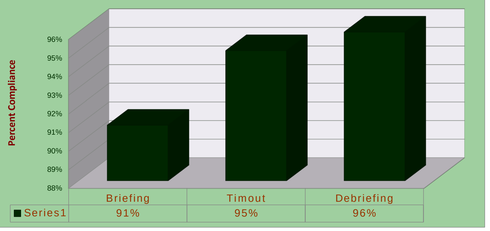


Figure 3. Were All Team Members Present?

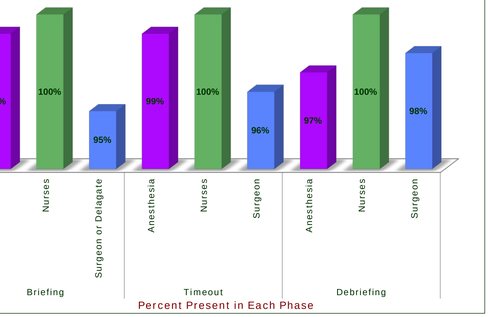
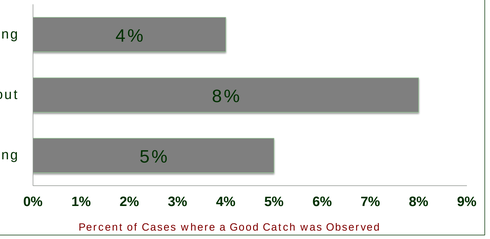


Figure 4. Was there a Good Catch?



Discussion

- The briefing showed the lowest compliance amongst the three phases of the checklist. Also compared to other phases many items in the briefing phase were neglected by the surgical teams. Some surgeons felt that their presence for the briefing phase was not necessary, and instead the briefing can be done between the nurses and the anesthesia team alone.
- The timeout and the debriefing phases were routinely done in our surgical suites. Most of the OR staff indeed felt that the timeout and the debriefing processes had a favorable impact on the safety attitudes of the team members and enhanced the safety climate within the OR.
- There were many barriers in implementing the safety checklist in surgical procedure rooms for small and quick procedural cases. Many surgeons dismissed the checklist, especially the briefing phase, as redundant and waste of time for quick uncomplicated cases. Their criticism indeed holds some merit, as the surgical teams have an early morning huddle in which they review all the critical elements for the upcoming cases and plan for the necessary measures for each of the cases.
- A main criticism to the checklist was the degree of overlap between the briefing and the timeout phase. "Antibiotic prophylaxis" is an example of a item that is repeated in both the briefing and the timeout. Many surgeons believed that the number of items in the checklist should be reduced, as many of them are not relevant to their operational service. In fact, they called for a novel service-specific checklist.

Conclusions & Recommendations

- For the Surgical Procedure Rooms (SPR), a formal morning huddle should occur to review all the day's cases and plan for the necessary measures. This can serve as a substitute for the briefing phase. However, the timeout and the debriefing still need to occur.
- A cardiac-specific safety checklist needs to be developed in the cardiac operating room with the cardiac surgeons' involvement and be placed in ORs exclusively designated for cardiac surgeries.
- All members of the surgical team need to be reminded that the checklist's redundancy regarding the antibiotic prophylaxis is important. The briefing phase confirms the type and dosage of the antibiotic prophylaxis while the timeout phase confirms the administration time of the antibiotic.
- Morning introductions need to occur after the patient is asleep (i.e. during the first timeout of the day).
- The preoperative checklist needs to be omitted from the briefing phase. However, the nurses still need to confirm that the correct patient is in the room.
- We imagine placing a check-off note of the checklist phases on the OR white board might improve the surgeons' compliance. Also, having the surgeons responsible for documenting the checklist completion on their progress notes or on the patients' charts can make them more aware of the safety checklist.

References

1. Mahajan RP. The WHO surgical checklist. *Best Pract Res Clin Anaesthesiol 2011; 161-8*
2. Lingard L, Regehr G, Orser B, et al. Evaluation of a preoperative checklist and team briefing among surgeons, nurses and anesthesiologists to reduce failures in communication. *Arch Surg 2008;143:12-7*
3. Conley DM, Singer SJ, Edmondson L, et al. Effective surgical safety implementation. *J Am Coll Surg 2011; 212: 873-9*