

# Predictive value of surgical safety checklist and operating room



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Health care is complex, with several interdisciplinary elements, incredibly unpredictable and at high risk of hazard. Healthcare environments are complex and tightly coupled systems that have proven to be error-prone[i]. Patients expect to be reasonably safe when under medical supervision[ii]. In 1999, the US based, Institute of Medicine report, *To Err is Human*, claimed that between 44. 000 and 98. 000 patients in the US die every year from preventable adverse events.

However regardless of an ongoing push for drastic improvement of the safety culture in healthcare, medical errors continue to occur at unacceptable rates[iii].

The rising cost of health care is given progressively more importance worldwide. A major factor affecting hospital cost is complications following surgery[iv]. Surgical care is an integral part of health care throughout the world, with an estimated 234 million operations performed annually[v]. Surgical complications are a considerable cause of death and disability around the world. The World Bank reported that in 2002, an estimated 164 million disability-adjusted life years, representing 11% of the entire disease burden, were attributable to surgically treatable conditions[vi]. Surgical complications are devastating to patients, costly to health care systems, and often preventable, though their prevention typically requires a change in systems and individual behavior.

Safety is a critical aspect of the quality of care in a complex hospital setting. Wrong-site, wrong-procedure and wrong patient surgeries are catastrophic events for patients, medical caregivers and institutions[vii]. Given that

complications are, in general, associated with increased length of stay and cost, it is possible that such a reduction in morbidity rate will generate cost savings that can offset the expense of prospective data collection[viii]. Data suggest that at least half of all surgical complications are avoidable[ix]. Previous efforts to implement practices designed to reduce surgical site infections or anesthesia-related mishaps have been shown to reduce complications significantly[x].

### **The Rationale of Surgical Safety Checklist in Health care-**

Documented variation in the quality of medical care, especially for surgical procedures, has led to enthusiasm for systematic quality improvement programs[xi]. With extensive implementation; such systems might potentially reduce morbidity and mortality across big groups of Health care providers. In 2004, The Joint Commission introduced the mandatory Universal Protocol to all accredited hospitals as a means of preventing wrong surgeries or surgeries on the wrong patient or wrong site-sentinel events that have proven to be a direct result of communication failures[xii].

In 2008, the World Health Organization (WHO) published guidelines identifying multiple recommended practices to ensure the safety of surgical patients worldwide. The Safe Surgery Saves Lives Study Group at the World Health Organization (WHO) published the results of instituting a perioperative surgical safety checklist[xiii]. The use of this checklist in eight hospitals around the world was associated with a reduction in major complications from 11.0% before introduction of the checklist to 7.0% afterward.

Figure- 1 shows WHO Surgical safety checklist.

The results of a global pilot of the WHO checklist[xiv], demonstrated reliable performance

Of a series of safety checks, this could reduce surgical mortality and morbidity. Most

Commonly reported benefits of implementing the checklist were improved teamwork, safety,

more near misses captured smoother / quicker procedures and improved staff morale. The

two most commonly reported challenges for implementation of safety checklist are lack of

Clinical engagement, and a tendency to see the Checklist as a ' tick box exercise', rather than as a

tool to enhance communication and teamwork, hence adoption of safety checklist requires

Changes in systems and behavior of individual surgical teams.

## **The Operating Room (OR) briefings improves Surgical Outcomes –**

The purpose of the Operating Room (OR) briefings is to formulate and share the operative plan, to promote teamwork, to alleviate hazards to patients, to reduce preventable harm, and to ensure all required equipment is available.

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The Operating Room (OR) briefing checklist, named as Operating Room (OR) Briefing 5, enhances communication among Operating Room (OR) team members and improve patient safety (Table-1). The 2-minute Operating Room (OR) briefing familiarizes surgical team with each other and with the operative plan through 3 critical components:

Each member of the Operating Room (OR) team states his or her name and role;

The surgeon leads the “ timeout” to identify critical components of the operation, including the surgical site.

Surgical care teams discuss and mitigate potential safety hazards[xv].

What are the names and roles of the team members?

Is the correct patient/procedure confirmed? (TIME-OUT)

Have antibiotics been given? (if appropriate)

What are the critical steps of the procedure?

What are the potential problems for the case?

Reviewed by nursing, anesthesia, and surgery.

Table- 1 showing Operating Room Briefing 5.

The philosophy of ensuring the correct identity of the patient and site through preoperative site marking, oral confirmation in the operating room, and other measures proved better surgical outcomes and reduced cost of

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surgical complications. A “ surgical time-out” or “ surgical pause,” introduced on 1st June, 2006, involves the Operating Room (OR) team convening after the administration of anesthetic but before skin incision for each patient to reverify the patient, procedure and site of surgery.

Figure- 2 shows 5 steps for safer surgery (Adapted from Patient Safety First)

The Hospital for Sick Children (Sick Kids) in Toronto, Ont., initiated two Operating Room safety initiatives: a “ 07: 35 huddle” (preoperative Operating Room (OR) briefing) and a “ surgical time-out” (perioperative Operating Room (OR) briefing).

The above tools provide Operating Room (OR) teams with a structured and standardized approach to increase interdisciplinary communication in the Operating Room (OR), thereby promoting teamwork and creating a culture of safety. The expectation is that Operating Room (OR) team members are encouraged to become more proactive about patient safety, speak up when an identified problem in patient care is discovered and improve patient outcomes. ii In all Dental Operating Room (OR)s there must be 1-page laminated poster highlighting the key components of huddles and time-outs to facilitate and guide the Dental Operating Room (OR) briefings. Exposing Dental students, interns and residents to safety initiatives and incorporating such initiatives into Dental educational curricula may encourage positive shift in the culture of Operating Room and it may serve to get more future Dental Surgeons “ to believe in the importance of surgical safetylist and operative briefings rather than go through the motions.”

**Conclusion –**

The use of surgical safety checklist and Operating Room (OR) briefings as a routine procedure helps to reduce preventable Dental surgical risks. Dental Hospitals should consider implementing Safety Checklists and Operating Room (OR) briefings as a strategy to improve efficiency, clinical and economic outcomes for Dental patients. Applied on a global basis, surgical safety checklist and Operating Room (OR) briefings has the potential to prevent large numbers of dental surgery complications, although further studies are needed to determine the precise mechanism and durability of the effects of surgical safety list and Dental Operating Room briefings in Dental Hospitals.