



ORIGINAL RESEARCH PAPER

Surgery

SURGICAL SAFETY CHECKLIST COMPLIANCE: A RETROSPECTIVE STUDY.

KEY WORDS: Exploratory, Surgical safety checklist, Compliance, Data mining

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ABSTRACT

Retrospective study aimed to evaluate the compliance, completion & accuracy of surgical safety checklist in case files of patients undergone surgery in selected accredited hospital of Indore City. Retrospective study was carried out with 830 case files of patients undergone surgery in selected accredited hospital of Indore City. Data mining was done from the month of November 2017- January 2018. Four items (Sign in, Time out, Anticipated critical events, Sign out) were checked in surgical safety checklist. Data was analyzed with descriptive statistics that is frequency and percentage. The result showed that out of 830 case files, compliance rate of surgical safety checklist were found (100%). Out of 830 surgical safety checklist 119(14.34%) were found complete & remaining 711(86%) were partially completed. Also 119(14.34%) of the surgical safety checklist were accurate & rest of the 711(86%) were not accurate. Four items were analyzed in surgical safety checklist, out of which Sign in 55%(457/830), Time out 40.9%(340/830), Anticipated critical events 50.2%(417/830), Sign out 33% (274/830) were found partially completed.

INTRODUCTION:-

The fundamental health care services given in the health care system is surgical service. Worldwide 234 million surgical operations are performed annually and complications occurred in 3-16% of surgical procedures^{1,2}. Surgical complications are the main cause of morbidity and mortality and also leads to financial burden to patients and providers³. But it has been found that at least half of the complications that occur are avoidable⁴.

In January of 2007, the World Health Organization's (WHO) World Alliance for Patient Safety initiated a project called "Safe Surgery Saves Lives" to identify minimum standards of surgical care that can be universally applied across countries and settings⁵. Through a two year process involving international input from surgeons, anesthesiologists, nurses, infectious disease specialists, epidemiologists and others, the WHO created a surgical safety checklist that encompasses a simple set of surgical safety standards that can be used in any surgical procedure setting. Each safety step on the checklist is simple, widely applicable, and measurable.

The Second Global Patient Safety Challenge: Safe Surgery Saves Lives addresses the safety of surgical care. The World Alliance for Patient Safety initiated work on the Challenge in January 2007⁶.

An independent international study at 357 hospitals located in 58 countries has demonstrated that the use of a surgical safety checklist has been associated with a 38% lower odds of 30-day death after emergency abdominal surgery compared with the same operations performed at hospitals that didn't have a checklist⁷.

The checklist essentially identifies three distinct phases of an operation, each corresponding to a specific period in the normal flow of work: Before the induction of anesthesia, before the incision of the skin, and before the patient leaves the operating facility. In each phase, a 'checklist coordinator' must confirm that the surgical team has completed the listed tasks before it proceeds with the procedure.

The intention of such a checklist is to systematically and efficiently ensure that all conditions are optimum for patient safety, and that all staff are identifiable and accountable, and errors in patient identity, site and type of procedure are avoided completely. By following a few critical steps, health care professionals can minimize the most common and avoidable risks endangering the lives and well-being of surgical patients. It is important to increase awareness of this safety initiative⁸.

OBJECTIVES:-

- 1) To evaluate the surgical safety checklist compliance rate in case files of patients undergone surgery in selected accredited hospital of Indore city.
- 2) To determine the completion and accuracy in surgical safety checklist in case files of patients undergone surgery in selected accredited hospital of Indore city.

METHODOLOGY:-

Study Approach- In this study Quantitative approach was used.
Research Design- Non-Experimental Retrospective research design was used.
Setting:- The study was conducted in medical record department of Bombay Hospital, Indore.
Sample:- Case files of patients undergone surgery from the month of November 2017- January 2018
Sample Size- 830

DATA COLLECTION PROCEDURE:-

Data mining was done on 830 case files of patients undergone surgery from the month of November 2017- January 2018. Four items of surgical safety checklist were evaluated i.e Sign in, Time out, Anticipated critical events, Sign out. Surgical Safety Checklist were evaluated for compliance, completion and accuracy. Time taken for data collection was 1 month. The collected data was analyzed by using descriptive statistics.

RESULTS:-

SECTION-I: COMPLIANCE RATE OF SURGICAL SAFETY CHECKLIST

During the study period 830 surgical safety checklist were evaluated & the compliance rate was 100%

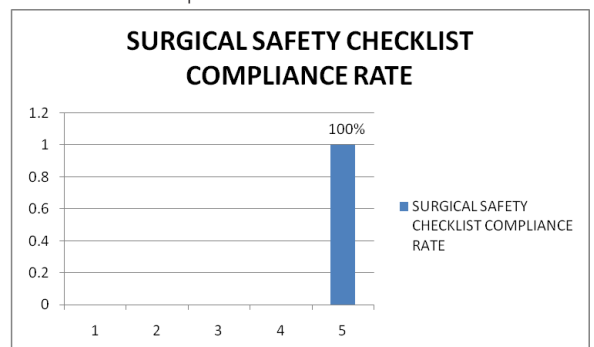


Figure 1:- Bar Diagram showing surgical safety checklist compliance rate

SECTION-II:- ANALYSIS OF COMPLETION & ACCURACY OF SURGICAL SAFETY CHECKLIST.

Table 1:- Table showing Cumulative frequency and percentage of completion and accuracy of surgical safety checklist.

N=830

Completion			Cumulative Frequency	Accuracy			Cumulative Frequency
Completed	119	14.34%	14.34	Accurate	119	14.34%	14.34
Partial Completed	711	86%	100	Not Accurate	711	86%	100

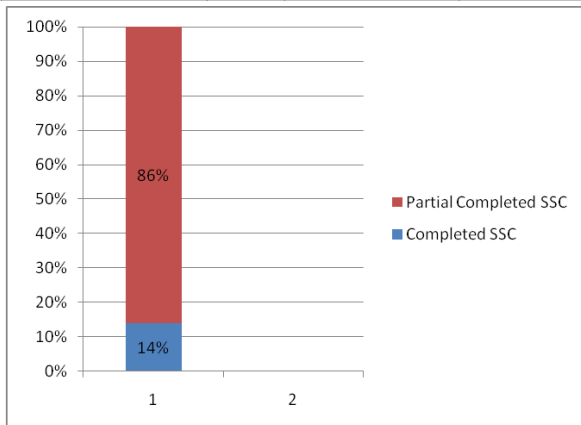


Figure 2:- Sub divided Bar diagram showing Completeness of surgical safety checklist(SSC)

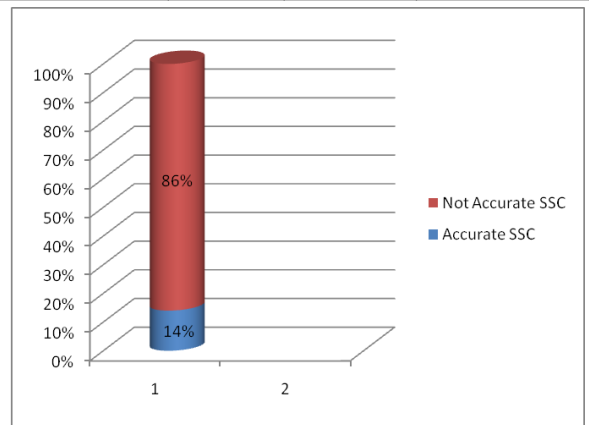


Figure 3:- Sub divided Bar diagram showing accuracy of surgical safety checklist(SSC)

Table 2:- Table showing frequency and percentage of partially completed items in surgical safety checklist.

Items	Parameters	Frequency	Percentage (%)
Sign In	Patient has confirm identity, procedure, consent, serology report	457	55
	Site marked/not applicable		
	Anesthesia safety check completed		
	Pulse oxymeter on patient and functioning		
	Does patient have a known allergy		
	Difficult airway/aspiration risk		
	Risk of >500ml blood loss		
Signature, Name of Pre-op Nurse & Anesthetist with Time & Date			
Time Out	Confirm all team members have introduced to themselves by name and role	340	40.9
	Surgeon, anesthesia professional, & nurse verbally confirmed- patient, site, procedure		
Anticipated Critical Events	SURGEON REVIEWS :what are critical or unexpected steps. Operative duration and anticipated blood loss	417	50.2
	ANESTHESIA TEAM REVIEWS: are there any patient any concerns		
	NURSING TEAM PREVIEWS: has strictly (including indicator results) been confirmed? Are there equipment issue or any concerns		
	Has antibiotic prophylaxis been given within the last minutes?		
Sign Out	Is essential imaging displayed?	274	33
	NURSE VERBALLY CONFIRMS WITH THE TEAM		
	Name of the procedure recorded		
	That instrument sponge and needle count are corrected (or not applicable) how the specimen is labeled(including patient)		
	Whether there are any equipment problems to be addressed		
	Surgeon , anesthesia professional ,nurse review the key concern for recovery and management of the patient		
Name & Signature of Scrub Nurse, anesthetic, Surgeon with Time & Date .			

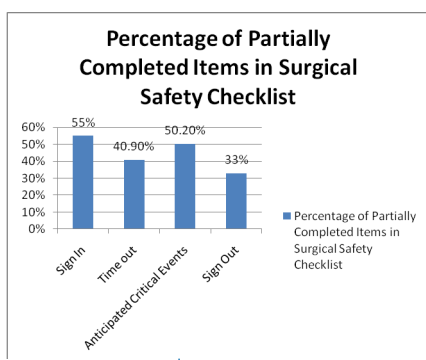


Figure 4:- Bar diagram showing percentage of Partially Completed Items in Surgical Safety Checklist.

DISCUSSION:-

During this study 830 case files were checked to find the compliance rate of surgical safety checklist and it was found that the compliance rate was (100%). Out of 830 surgical safety checklist 119(14.34%) were found complete & remaining 711(86%) were partially completed. Also 119(14.34%) of the surgical safety checklist were accurate & rest of the 711(86%) were not accurate. Four items were analyzed in surgical safety checklist, out of which Sign in 55%(457/830), Time out 40.9%(340/830), Anticipated critical events 50.2%(417/830), Sign out 33% (274/830) were found partially completed.

RECOMMENDATIONS:-

- A similar study can be done with large number of case files of patients undergone surgery.
- A Prospective study can be conducted to assess the compliance, completion & accuracy of surgical safety checklist.
- Regular audit of checklist utilization should be done to increase the completeness and accuracy of surgical safety checklist.
- Supplementary training and attention to actual checklist use should be indicated to surgeons, anesthesiologists, nurses to ensure that this valuable tool could be used more routinely.

CONCLUSION:-

Despite checklist was used in all surgeries, majority of the surgical safety checklists were partially completed and inaccurate. The present study did not assess outcomes, but it is assumed that partially completed and inaccuracy in surgical safety checklist can put patients at risk.

Regular and appropriate implementation of checklist is used as a tool for improving team communication; strengthening teamwork and improving patient safety. On top, that to amplify consistency, the active team members should be motivated to utilize the checklist during their work practice regularly.

REFERENCES

1. Weiser TG, Regenbogen SE, Thompson KD, et al. An estimation of the global volume of surgery: a modeling strategy based on available data. *Lancet*. 2008;372:139–144. doi: 10.1016/S0140-6736(08)60878-8.
2. World Health Organization. Safe surgery saves lives. Geneva: WHO; 2008. http://www.who.int/features/factfiles/safe_surgery/en/index.html. Accessed 14 February 2012.
3. World Alliance for Patient Safety . Safe surgery saves lives. Geneva: World Health Organization; 2008. p. 8.
4. Kable AK, Gibberd RW, Spigelman AD. Adverse events in surgical patients in Australia. *Int J Qual Health Care*. 2002;14:269–276. doi:10.1093/ intqhc/ 14.4.269.
5. <https://clinicaltrials.gov/ct2/show/NCT00934310>
6. http://www.who.int/patientsafety/safesurgery/ss_checklist/en/
7. GlobalSurg Collaborative (2016). "Mortality of emergency abdominal surgery in high-, middle- and low-income countries". *British Journal of Surgery*. 103 (8): 971–988. doi:10.1002/bjs.10151. PMID 27145169.
8. Sivathasan N, Rakowski KR, Robertson BF, Vijayarajan L (2010-11-26). "The World Health Organization's 'Surgical Safety Checklist': should evidence-based initiatives be enforced in hospital policy?". *JRSM Short Rep*. 1: 40. doi:10.1258/ shorts. 2010.010007. PMC 2984370 .PMID 21103132