



**Summer Internship Report**  
**at**  
**MAX SUPER SPECIALITY HOSPITAL, SAKET**

**(April 18<sup>th</sup> to June 17<sup>th</sup>, 2022)**

**A Report**

**By**  
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**PGDM (Hospital and Health Management)**

**2021-2023**



**International Institute of Health Management Research, New Delhi**

## **Certificate of Approval**

The Summer Internship Project of titled “**A Descriptive Study to assess the level of compliance of Procedural safety checklist and WHO surgical safety checklist to ensure safe surgery and patient safety in Max Healthcare, Saket for a period of 2 months.**” at “**MAX HEALTHCARE**” is hereby approved as a certified study in management carried out and presented in a manner satisfactorily to warrant its acceptance as a prerequisite for the award of **Post Graduate Diploma in Health and Hospital Management** for which it has been submitted By **Ms. Komal**. It is understood that by this approval the undersigned do not necessarily endorse or approve any statement made, opinion expressed, or conclusion drawn therein but approve the report only for the purpose it is submitted.

**NAME OF THE MENTOR**

**DESIGNATION**

**IIHMR, DELHI**

**ACKNOWLEDGEMENT**

*“It is not possible to prepare a project report without the assistance & encouragement of other people. This one is certainly no exception.”*

On the very outset of this report, we would like to extend my sincere & heartfelt obligation towards all the personages who have helped us in this endeavour. Without their active guidance, help, co-operation & encouragement. We would not have made headway in this project.

Firstly, we would like to thanks **Ms. Divya Agarwal** for giving us the opportunity to undergo this internship and specially acknowledge her advice, supervision and the vital contribution as and when required during this project. Her guidance had triggered and nourished us intellectual maturity that helped us for a long time to come. She helped us all the time we needed and she gave right direction towards completion of project.

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## ACRONYMS/ ABBREVIATION

S. No.	ABBREVIATION	FULL FORM
1.	SSC	SURGICAL SAFETY CHECKLIST
2.	PSC	PROCEDURE SAFETY CHECKLIST
3.	WHO	WORLD HEALTH ORGANIZATION
4.	JCI	JOINT COMISSION INTERNATIONAL
5.	DALYs	DISABILITY- ADJUSTED LIFE YEARS
6.	IPSG	INTERNATIONAL PATIENT SAFETY GOALS
7.	ED	EMERGENCY DEPARTMENT
8.	OT	OPERATION THEATRE
9.	ENT	EAR, NOSE & THROAT
10.	MAMBS	MINIMAL ACCESS, METABOLIC AND BARIATRIC SURGERY

# ***OBSERVATIONAL LEARNING***

**TITLE**

**A Descriptive Study to assess the level of compliance of Procedural safety checklist and WHO surgical safety checklist to ensure safe surgery and patient safety in Max Healthcare, Saket for a period of 2 months.**

## **BACKGROUND**

Surgical intervention has been a vital part of global health care for over a decade with an estimated 234 million operations performed yearly.<sup>1</sup> The burden of surgical intervention on public health systems will continue to expand as the incidences of traumatic accidents, malignancies, and cardiovascular disease continue to rise.<sup>2</sup>

Surgical intervention is frequently the sole way to alleviate impairments and lower the risk of mortality from common diseases. Surgical interventions account for an estimated 13% of the world's total disability-adjusted life years, with millions of people undergoing treatment each year (DALYs).<sup>2</sup>

WHO surgical safety checklist outlines essential standards of surgical care and has been shown to reduce complications and death associated with surgery. The SSC, which was issued in 2009 as part of the WHO's "Safe Surgery Saves Lives" campaign, sought to enhance medical staff understanding of surgical safety management. The SSC has become a key tool for health care practitioners to ensure surgical patient safety in hospitals around the world after a period of rapid growth.<sup>3</sup>

Another important feature of the WHO checklist is that it combines technical items (such as antibiotic administration and pulse oximeter use) with so-called non-technical items (such as team introductions and procedure confirmations) whose primary goal is to promote aspects of teamwork, communication, and situational awareness. Research showing a link between team practises (e.g., communication behaviours) and improved safety processes and attitudes inspired the inclusion of non-technical items in the checklist.<sup>4</sup> Checklists are more than a basic intervention in the healthcare and other businesses. At its most basic level, they serve as reminders to ensure that fundamental care procedures are followed (assuming whichever checklist is in place is used correctly). Checklists and their use have ramifications for teamwork, cohesion, and safety culture on a larger scale. People must adapt their work patterns to use checklists; for example, the WHO SSC's Time Out phase requires the entire operating theatre team to meet and pause for a few seconds before starting with a procedure. Given that



checklists were rarely used in the healthcare business until recently, it has been suggested that they are not a panacea that will solve every safety problem—rather, they are more likely to interact with the local teams and organization's safety culture. 8 If an organisation has significant bigger difficulties, a checklist is unlikely to be beneficial, and it may even be reduced to a tick box exercise.<sup>5</sup>

This is a key component of JCI's International Patient Safety Goal (IPSG), which aims to ensure surgical patient safety. The surgical safety checklist quality improvement programme has resulted in a considerable rise in the policy's compliance rate, which has had a beneficial impact on clinical staff collaboration and safety awareness. For routinely planned procedural sedation or local anaesthetic instances, invasive operations conducted outside the OR include inpatient, outpatient, and emergency department (ED) procedures. Invasive operations are growing increasingly sophisticated, necessitating the administration of a multidisciplinary team.<sup>6</sup>

## **REVIEW OF LITERATURE**

A perspective study was conducted by Abraham Tarekegn Mersh, Debas Yaregal Melesse, Wubie Birlie Chekol to study the compliance of surgical safety checklist in all surgical procedures done in operation theatres, in a teaching hospital, Ethiopia, 2021. All surgical procedures performed in the operating rooms of a Comprehensive Specialized Teaching Hospital were covered. Data were gathered by direct observation using a standard checklist from the World Health Organization. Descriptive statistics were performed using SPSS version 20. The study revealed that total of 100 operations were observed in the main operation theatres of their surgical safety before induction of anaesthesia, before surgical incision and before any team member leave the operation room. From those 100 surgical procedures; patients' identity, procedure and informed consent, anaesthesia machine checking and medication preparations were performed fully (100%) compliance with the standards and some standards weren't compliant with the standards of WHO surgical safety checklists.<sup>8</sup>

A prospective observational study was conducted by Tadesse B. Melekcie and Gashaw M. Getahun to study the compliance with Surgical Safety Checklist completion in the operating room of University of Gondar Hospital, Northwest Ethiopia. Elective and emergency surgery was performed on 282 individuals from January to March 2013. The SPSS 20 software was used to calculate the compliance and completeness rate with installation of the Sign-in, Time-

out, and Sign-out domains. A total of 282 operations were performed and checklists were utilized in 39.7 % (112/282) of cases. Among these, most checklists were employed during emergency procedures (61.6 %) that need general anesthesia (75.9 %) in department of surgery (58.9 %). The overall compliance and completeness rate were 39.7 and 63.4 % respectively. The sign-in, time-out and sign-out were missed in 30.5 % (273/896), 35.4 % (436/1,232) and 45.7 % (307/672) respectively. The main reasons cited for non-user were lack of previous training (45.1 %) and lack of cooperation among surgical team members (21.6 %).<sup>9</sup>

A Retrospective cohort study was conducted by Gitelis M, Kaczynski A, Shear T, Deshur M, Beig M, Sefa M et al. to study the Increasing compliance with the World Health Organization Surgical Safety Checklist. Prior to the implementation of the electronic SSC, an anonymous OR observer randomly selected cases and assessed the compliance rate. An electronic audit was conducted in June 2014 to evaluate the compliance rate. Additionally, throughout the 2014 summer, random OR observations were made. Perioperative risk occurrences, such as permission problems, inaccurate counts, improper sites, and erroneous procedures, were compared before and after the computerised SSC rollout. Following the SSC's integration into the electronic health record, compliance increased from 48% (n = 167) to 92% (n = 1,037; P .001). A rise in compliance was seen among surgeons (91 percent vs 97 percent; P .001), anaesthesiologist's (89 percent vs 100 percent; P .001), and nurses (55 percent vs 93 percent; P .001). A comparison of risk incidents during the pre- and post-rollout timeframe revealed a decrease in 32%. Indicators for the entire hospital, such as duration of stay and 30-day readmissions, decreased. 76 percent of surgeons, 86 percent of anaesthesiologist's and 88 percent of nurses said they thought the electronic SSC would improve patient safety in a study to gauge how the OR staff felt about the new checklist.<sup>7</sup>

## **AIM**

- To assess the level of compliance of Procedure safety checklist and WHO surgical safety checklist to ensure safe surgery and patient safety.

## **OBJECTIVE**

- To assess the level of compliance of all the elements of Procedural safety checklist
- To assess the level of compliance of all the elements of WHO Surgical safety checklist

## METHODOLOGY

- Study Approach:
  - Quantitative research
- Study Design:
  - Cross sectional Descriptive Study Design
- Study Setting:
  - Operation Theatre, Max Healthcare, Saket
- Study Population:
  - The population comprises of all the procedural and surgical procedures done by Physicians of Max Healthcare, Saket
- Selection Criteria:
  - INCLUSION CRITERIA: All the procedures and surgeries conducted in the hospital.
  - EXCLUSION CRITERIA: All the procedures and surgeries conducted at night or on Sunday.
- Study Variables:
  - DEPENDENT VARIABLE: level of compliance of Procedural safety checklist and WHO surgical safety checklist
- Sample Size:
  - P value is taken as 68% as this is the lowest value ranging from 68% to 99% and 68% is the reconcile consent and preop value.<sup>7</sup>

P = 68%

Q= 1-p

$Z = 1.96$

$e = 0.1$

$n = 83$

➤ Sampling Method:

- Convenience Sampling Techniques: as the Audit was conducted as per the self-convenience in the hospital

➤ Data Collection Tool:

- A Procedure safety audit tool was developed with the help of the hospital's Procedure Safety Checklist and the policy of IPSG- 4 & 4.1
- A Surgical Safety audit tool was developed through the WHO surgical safety checklist and the JCI Standard of International Patient Safety Goal of to ensure safe surgery

➤ Development of the tool:

Preparation of the blue print of procedure safety and surgical safety audit tool

Preparation of items according to the blue print

Validation of tools by quality manager

Preparation of final audit tool according the elements of the checklist

➤ Method of data collection:

- A data was collected through the observation process in the following way:

- ❖ A procedure safety audit tool was used for the observation and the data was collected from the areas like Endoscopy, Bronchoscopy, Cath Lab, Interventional Radiology where the invasive procedures are done.
- ❖ A surgical safety audit tool was used for the observation and the data was collected from the Oncology OT, Neurosurgery OT, MAMBS OT, Cardiac Surgery OT, General Surgery OT, ENT OT, Gastro Surgery OT.

➤ Data Management Plan:

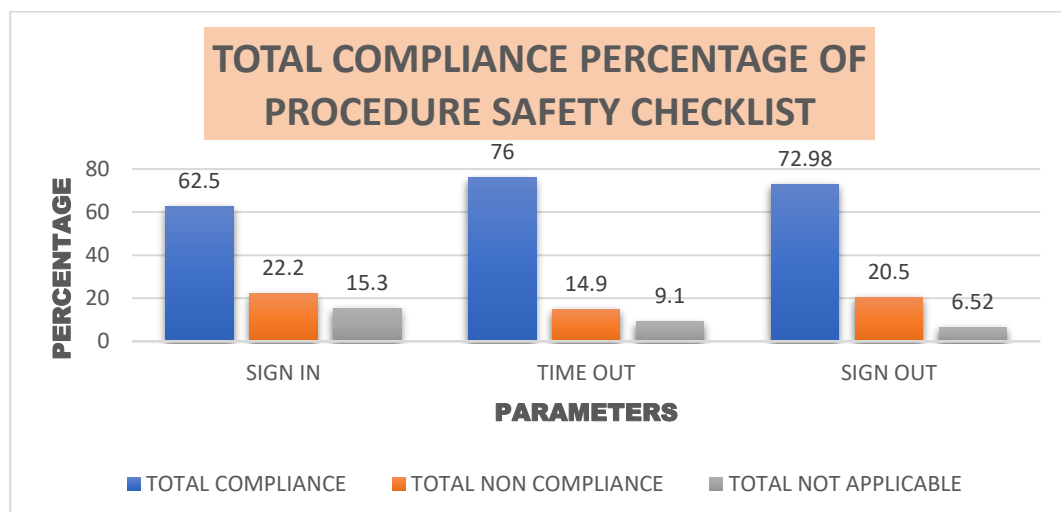
- The data was analysed with the descriptive statistics and the compliance was calculated using Excel
- The analysed data was presented in table, graphs and diagrams.

## RESULTS

### Procedure Safety Checklist compliance

**Table 1: Percentage Compliance of procedure safety checklist**

	SIGN IN	TIME OUT	SIGN OUT
<b>TOTAL COMPLIANCE</b>	62.5	76	72.98
<b>TOTAL NON-COMPLIANCE</b>	22.2	14.9	20.5
<b>TOTAL NOT APPLICABLE</b>	15.3	9.1	6.52

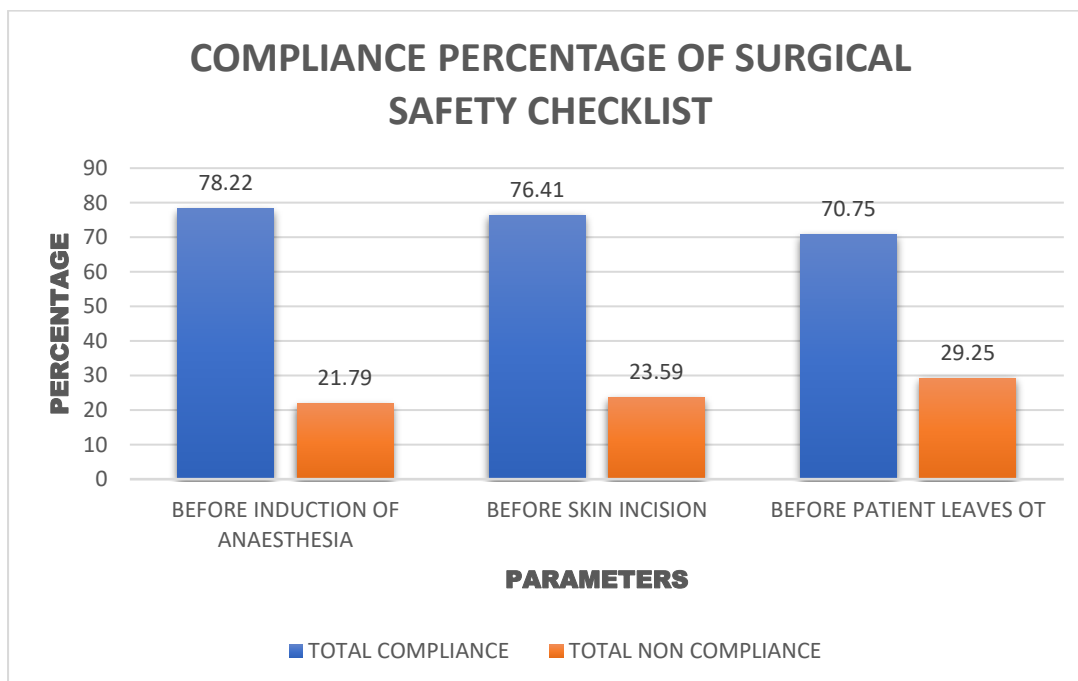


**Figure 2: A bar diagram showing the percentage compliance, non-compliance of various parameters of procedure safety checklist**

The observation audit was done in the various departments like Endoscopy, Bronchoscopy, Interventional Radiology and Cath Lab and it was observed that there was 62.5 % compliance follow up of the parameter Sign In, 76% of Time out & 72.98% of Sign out, whereas the non-compliance percent was 22.2 of Sign-In, 14.9 of Timeout & 20.5 of Sign Out.

**Table 2: Percentage compliance of surgical safety checklist**

	BEFORE INDUCTION OF ANESTHESIA	BEFORE SKIN INCISION	BEFORE PATIENT LEAVES OT
<b>TOTAL COMPLIANCE</b>	78.22	76.41	70.75
<b>TOTAL NON- COMPLIANCE</b>	21.79	23.59	29.25



**Figure 3: A bar diagram showing the percentage compliance and non-compliance of surgical safety checklist**

The observation audit was done in the OT of Departments like Cardiac surgery, Onco surgery, Neuro surgery, Gastro surgery, MAMBS, ENT, General surgery and it was observed that the compliance percentage at each parameter was 78.22% for Before induction of Anaesthesia,

76.41% for Before skin incision and 70.75% for Before patients leave OT. Whereas the non-compliance percentage was 21.79% for Before induction of Anaesthesia, 23.59% for Before skin incision and 29.25% for Before patients leave OT. The major factor of non-compliance was the lack of training and self development.

## **DISCUSSION**

As World Health Organization estimated that 234 million operations are performed annually around the globe. Of those procedures 9.2% were faced preventable harms daily during surgery across the world.<sup>2</sup> Although a vast amount of data suggests that a properly implemented SSC reduces preventable mistakes in the OT, there is little known as to how to implement the checklist most effectively. Nearly for the procedure safety checklist the compliance was about 62.5 for sign in, 76 for time out and 72.98 for sign out process. Whereas for the surgical safety checklist the compliance was 78.22 of before induction of anaesthesia, 76.41 of before skin incision and 70.75 of before patient leaves OT of various parameters of SSC. As a result, implementing surgical checklists is more challenging than it first seems and involves teamwork, leadership, and flexibility that differs from how it is currently achieved. The idea behind implementing a checklist in surgical and procedure practice was that perioperative morbidity and mortality may be reduced by regularly checking common safety issues, improving team dynamics, and routinely checking common safety issues.

## **CONCLUSION**

The aim of this study was to assess the level of compliance of Procedure safety checklist and WHO surgical safety checklist to ensure safe surgery and patient safety. Thus, this study has contributed to compliance assessment. The SSC, when conducted correctly, represents an important tool for patient safety. Well-functioning teams encourage mutual respect and trust, which are essential values for all team members doing a safe job for the patient. The study showed clearly the consequences of insufficient implementation of the SSC. Furthermore, it revealed a gap between the hospital's procedures and practice related to responsibility for the SSC execution. Until the SSC execution is a customary practice, the hospital's management must demand and make the responsible professions accountable for compliance. To acquire further knowledge and understanding of the SSC issues, similar studies at other operating departments would be interesting, with a view to comparing results. It would also be appropriate to investigate the experiences and opinions of nurses, anesthetists and physicians in surgical teams and procedure team002E

## **RECOMMENDATION**

- ❑ So, we recommended preparing common discussion panel for the operation room team and Non-OT procedure teams about the performance of the surgical safety and procedure safety checklist creating awareness about surgical safety and procedure safety for the team by short term training and encouraging and following operation room team about their surgical safety performance during each procedure.
- ❑ The major finding, we observed was that the staff was unaware about the use of procedure and surgical safety checklist and for creating the awareness and making staff knowledgeable about the use of checklist a daily report was submitted to the Team Leader to make it more compliant.
- ❑ During the audit we communicated and educated the Team leaders about making the staff skill about proper use of the checklist.
- ❑ We observed that there was lack of communication between the team members during the sign in, time out and sign out for which the same was communicated to the staff during the audit process.
- ❑ We made a regular random visit to OT's and Procedure areas to see the checklist compliance about its use after submitting the day report to the Team Leaders.

## **ETHICAL CONSIDERATION**

- All the credentials collected will be kept confidential and will be used for the study purpose only.
- The checklist used will be anonymous.
- Verbal Informed consent will be taken from the quality manager for the audit in the OT and other procedural areas
- The participants have all the rights to quit the study if they want, as it is completely voluntary.

## **REFERENCE**



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Surgery [Internet]. 2021 [cited 20 June 2022];69:102702. Available from: <https://doi.org/10.1016/j.amsu.2021.102702>

9. Melekiet T, Getahun G. Compliance with Surgical Safety Checklist completion in the operating room of University of Gondar Hospital, Northwest Ethiopia. BMC Research Notes [Internet]. 2015 [cited 20 June 2022];8(1):361. Available from: <http://10.1186/s13104-015-1338-y>

## **ANNEXURES**

- **Procedure safety checklist**



### Procedure Safety Checklist - Non-OT

Patient Label	
UHID: _____	IP No. _____
Name: _____	Age/ Gender: _____
Name of the Consultant: _____	
Date of Admission: _____	

Procedure Name: _____		Date: _____
<b>SIGN-IN PROCEDURE</b> Has patient confirmed his /her identify, site, procedure and consent. <input type="checkbox"/> Yes Name of the Procedure _____ Site & Side of procedure <input type="checkbox"/> Left <input type="checkbox"/> Right <input type="checkbox"/> NA Any Allergy <input type="checkbox"/> Yes <input type="checkbox"/> No Difficult airway or aspiration risk? <input type="checkbox"/> Yes and equipment assistance available <input type="checkbox"/> No Relevant documents & diagnostics Investigation reports available <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA Required blood product present (wherever applicable) <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA Presence of appropriate equipment and consumables <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA	<b>TIME OUT (BEFORE INITIATION OF PROCEDURE)</b> <input type="checkbox"/> Confirm all team members have introduced themselves by name and role. <input type="checkbox"/> Confirm the patient's name, procedure, site and where the incision will be made Correct Procedure Name (specify full name of the procedure) _____ Comorbidities <input type="checkbox"/> Yes <input type="checkbox"/> None Antibiotic Prophylaxis <input type="checkbox"/> Yes <input type="checkbox"/> NA Time of completion of Time Out: _____	<b>SIGN OUT (END OF PROCEDURE)</b> Labelling of Specimens/Samples, labels are read aloud- (using two identifiers) and verified <input type="checkbox"/> Yes <input type="checkbox"/> NA Verbally confirmation done by member of the team <input type="checkbox"/> Yes (Name of the invasive procedure) _____ Completion of instrument, sponge and needle counts (as applicable) <input type="checkbox"/> Yes <input type="checkbox"/> NA Any Equipment problem to be addressed (as applicable) <input type="checkbox"/> Yes <input type="checkbox"/> NA Post Procedure concerns (if Any) _____ Time of Sign Out: _____
<b>Physician / Anaesthetist</b> Name: _____ Designation: _____ Signature: _____	<b>Proceduralist :</b> Name: _____ Designation: _____ Signature: _____	<b>Technician / Nurse :</b> Name: _____ Designation: _____ Signature: _____

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**\*\*Double clicks on the picture to enlarge**

- Procedure safety audit tool

Parameters	Y/N/NA
NAME OF PATIENT	
AGE	
GENDER	
DEPARTMENT/ SPECIALITY	
NAME OF THE DOCTOR	
Patient Label	
Procedure name	
<b>SIGN IN</b>	
Patient identity confirmed	
Procedure name	
Investigation report/document available	

Procedural site confirmed & identified	
Presence of equipment's and supplies	
Requirement of blood products	
TIME OUT	
Team introduction	
Patient & Site confirmation	
Procedure name	
co morbidities	
Antibiotics Prophylaxis	
Time of Time Out	
SIGN OUT	
Sample labeling and verification	
Verbal confirmation	
Counts	
Problem addressed mentioned	
Time of Sign Out	
PHYSICIAN/ANAESTHETIST SIGNATURE WITH DATE AND TIME	
PROCEDURALIST SIGNATURE WITH DATE AND TIME	
TECHNICIAN/NURSES SIGNATURE WITH DATE AND TIME	

- **Surgical safety checklist**



### WHO Surgical Safety Checklist

**Patient Label**  
 UHID: \_\_\_\_\_ IP No: \_\_\_\_\_  
 Name: \_\_\_\_\_ Age/ Gender: \_\_\_\_\_  
 Name of the Consultant: \_\_\_\_\_  
 Date of Admission: \_\_\_\_\_

Date: \_\_\_\_\_ Procedure Start time: \_\_\_\_\_ End time: \_\_\_\_\_

Before induction of anesthesia (with Surgeon, Anesthetist and Nurse)	Before skin incision (with Nurse, Anesthetist and Surgeon)	Before patient leaves operation room (with Nurse, Anesthetist and Surgeon)
<b>WHEEL IN TIME:</b> Has patient confirmed his /her identity, site procedure and consent? <input type="checkbox"/> Yes Is the site marked? <input type="checkbox"/> Yes <input type="checkbox"/> NA Is the anesthesia machine and medication and safety check complete? <input type="checkbox"/> Yes Is the pulse oximeter on patient and functioning? <input type="checkbox"/> Yes Does the patient have a: Known allergy? <input type="checkbox"/> Yes <input type="checkbox"/> No Difficult airway or aspiration risk? <input type="checkbox"/> Yes and equipment assistance available <input type="checkbox"/> No Risk of >500ml blood loss (7ml/kg in children)? <input type="checkbox"/> Yes, and two IVs/central access and fluids planned <input type="checkbox"/> No Implants or specific equipment needed? <input type="checkbox"/> Yes <input type="checkbox"/> NA Is essential imaging available? <input type="checkbox"/> Yes <input type="checkbox"/> NA	<b>INCISION TIME:</b> <input type="checkbox"/> Confirm all team members have introduced themselves by name and role. <input type="checkbox"/> Confirm the patient's name, procedure, site and where the incision will be made Whether antibiotic prophylaxis has been given within the last 60 minutes? <input type="checkbox"/> Yes (Time of Administration: _____) <input type="checkbox"/> No <b>Anticipated Critical Events -</b> <b>To Surgeon:</b> <input type="checkbox"/> What are the critical or non-routine steps? <input type="checkbox"/> How long the case will take? <input type="checkbox"/> What is the anticipated blood loss? <b>To Anesthetist:</b> <input type="checkbox"/> Are there any patient - specific concern? <b>To nursing team:</b> <input type="checkbox"/> Has sterility (including indicator results) been confirmed? <input type="checkbox"/> Are there equipment issues or any concern? Is essential imaging displayed? <input type="checkbox"/> Yes <input type="checkbox"/> NA Time of completion of Time-out: _____	<b>Nurse verbally confirms:</b> <input type="checkbox"/> The name of procedure <input type="checkbox"/> Completion of instrument, sponge and needle counts <input type="checkbox"/> Yes <input type="checkbox"/> NA <input type="checkbox"/> Specimen labeling (read specimen labels aloud, including patient name & Max ID) <input type="checkbox"/> Whether there are any equipment problems to be addressed <b>To Surgeon, Anesthetist and nurse:</b> <input type="checkbox"/> Are there any key concern for recovery and management of this patient? <input type="checkbox"/> Yes <input type="checkbox"/> NO If yes, specify: _____
Sign of Surgeon _____	Sign of Anesthetist _____	Signature of Nurse: _____
Name: _____	Name: _____	Name: _____

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\* \*\*Double clicks on the picture to enlarge

- Surgical safety Audit tool

Parameters	Y/N/NA
Using Updated Checklist	
NAME OF PATIENT	
AGE	
GENDER	
DEPARTMENT/ SPECIALITY	
NAME OF THE DOCTOR	
Patient Label	
Procedure start Time	
<b>BEFORE INDUCTION OF ANAESTHESIA</b>	
WHEEL IN TIME	
Patient identity, procedure and consent confirmed	
Mark Surgical Site	
Anesthesia machine and medication and safety checked	
Known allergy checked	
Difficult airway/aspiration checked	

Risk of bleeding documented	
<b>BEFORE SURGICAL INCISION</b>	
INCISION TIME	
All team members introduced themselves by name and role	
Surgeon, Anesthetist and registered practitioner confirm verbally patient name, planned procedure, site and position	
Surgeon blood loss estimation	
Nurses' confirmation about the sterility of instrumentation	
Antibiotic Prophylaxis given within last 60 min	
Essential imaging displayed	
Time of completion of Time-out	
<b>BEFORE PATIENT LEAVES OPERATION THEATER</b>	
Record name of the procedure	
Confirm instruments, swabs and sharps counts are complete	
Specimens labeled by patient name	
Any equipment problem needs to addressed	
Report key concerns for the recovery room professional	