Surgical safety: Are we really concerned?

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To Err Is Human, to cover-up is unforgivable, to fail to learn is inexcusable.
Prof. Sir Liam Donaldson

Patient safety is one of the most important goals for health care system. Errors in the treatment result in significant morbidity and mortality for the affected patient population. This consequently burden the health care providers and incur disproportionately high costs to health care system due to a change in the doctor - patient relationship since last few decades.

Medical error is a term used when there is an unintended injury or complication that results in prolonged hospital stay, disability at the time of discharge or death, caused by healthcare management rather than the underlying disease itself. Medical errors can be categorized into Medication error, diagnostic error, surgical error, equipment failure, infection (Hospital acquired, surgical site infection, or implant related), error during Blood transfusion, order misinterpretation. 10% of in-patients suffer from adverse events and almost half of these are considered to be preventable.[1,2]

It is difficult to get the true incidence of surgical error globally. Approximately half million deaths are estimated to occur as a result of avoidable surgical error every year.[3] Studies in the developing countries suggest a death rate of 5–10% associated with major surgery[4-6]. In India, 5.2 million injuries are recorded each year due to medical errors and adverse events.[7]

Behavior of Surgical Team Members in Operating Room (O.R.) that can be considered at risk are: not checking instruments before surgery, Surgeon entering into O.R. after preparation and draping of patient, Surgeon running two rooms at a time, Multitasking from O.R., relying on memory about pathology, radiological investigations, unannounced substitutions of assistants or nursing staff in the middle of the case, and continuing wound closure during sponge/ Sharpe/ instrument search. This can lead to increase in the rate of surgical adverse effects. Impact of Surgical adverse effects can be in the form of Patient Harm, sometimes loss of organ/ life, assault on Hospital Staff which is nowadays common, loss of faith in Healthcare provider, Surgeon and Hospital litigations, indefensible public image risk, blame game amongst the Hospital Staff etc.

Most of these errors are attributable to inadequate communication and lack of team work. Like Medical profession, aviation industry is the area where safety is a concern. They carry out briefing before each airline flight. During this, there is a team meeting in which all the information needed for the joint performance of task is exchanged and checked. Same safety culture in operating room before surgery improves team cooperation, motivation, discipline and outcome.

Essential Objectives for Safe Surgery[8]:

To reduce the rate of surgical errors, WHO has defined 10 essential objectives with the purpose to facilitate patient safety policy and practice and are as follows.:

1. Operate on the correct patient at the correct site.
2. Prevent anaesthesia induced complications
3. Prepare for airway emergencies
4. Prepare for high blood Loss
5. Avoid adverse drug reactions
6. Minimise surgical site infections
7. Prevent retention of Instrument/ sponges
8. Accurately secure & identify specimens
9. Effectively communicate critical information with the team members
10. Establish surveillance of surgical safety.

Consent of a patient for procedure is the critical documentation. While taking consent for any invasive procedure, patient must be awake and alert and have the capacity to understand the details and implications of the procedure. Consent must be obtained in a language that the patient understands or through an interpreter. It should include a clear statement of the procedure to be performed and the site of operation, including laterality or level. The consent protocol can, however, be waived in emergency cases with threat to life or limb.

Surgical Safety Checklist[8]:

World Health Organization (WHO), in 2007 devised a Surgical Safety Checklist to improve the safety of surgical care in all Operative fields (Fig 1). After its evaluation in a study in eight hospitals in different parts of the world, WHO published it in 2009 and was recommended to be used as a part of their "Safe Surgery Saves Life" campaign.

Surgical Safety Check (SSC) list consists of 19 items relating to key aspects of patient safety and split in three distinct sections:

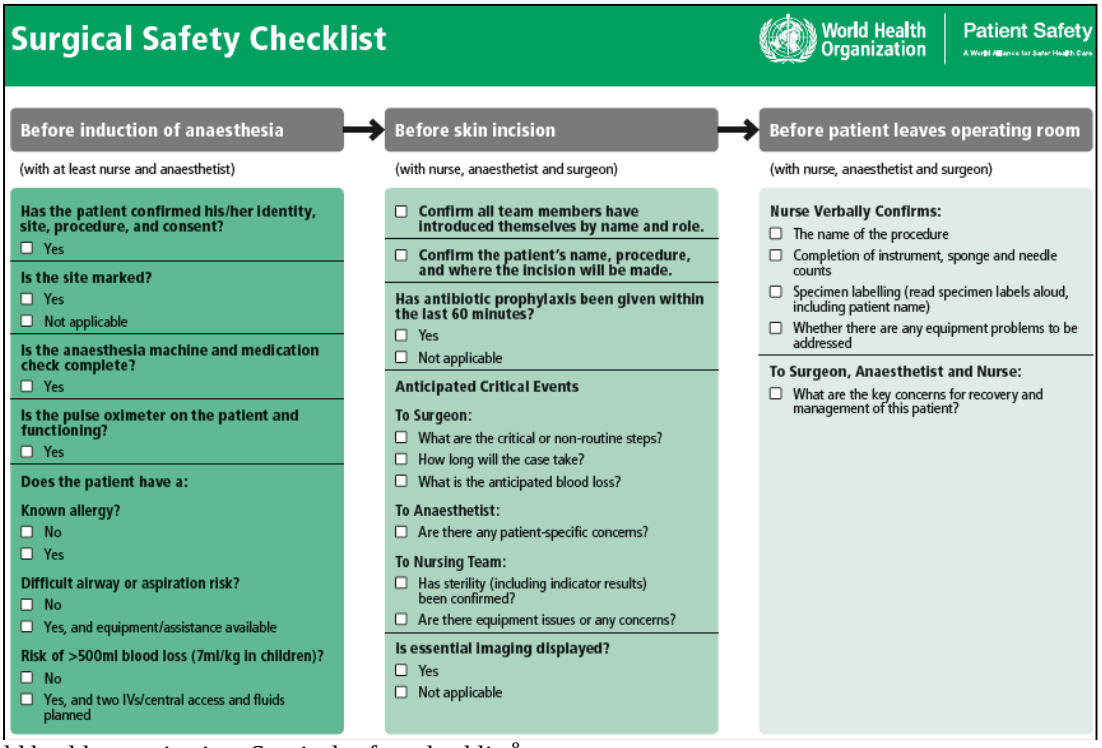

Fig. 1: World health organization: Surgical safety checklist[8]

i) Sign in- Immediately before the induction of anaesthesia
ii) Time out- Immediately before the skin incision
iii) Sign out- Immediately after skin closure before patient leaves operating room.

Every operation involves multiple steps that are to be performed correctly every time. As everyone's role in an operation room is interdependent, it is the responsibility on the anesthesia team, the nursing staff, and surgeons to communicate effectively to prevent avoidable complications such as wrong site surgery and inappropriate antibiotic administration.

Verification of the correct patient, site and procedure should be done at every stage from the time a decision is made to operate to the time the patient undergoes the operation. This should be done when the procedure is scheduled; at the time of admission or entry to the operating theatre; any time the responsibility for care of the patient is transferred to another person; and before the patient leaves the preoperative area or enters the procedure or surgical room. Surgeries performed on the wrong body part or wrong patient and performance of a wrong procedure are commonly categorized together as "wrong site surgery". It is potentially devastating event to patients, families, and Surgeon himself and often an indefensible case in the Court of Law. Wrong-site surgery is more likely to occur in procedures associated with bilaterality. To avoid such mistakes, patient's identity should be verified during sign in step. Surgical site should be marked by the operating surgeon, the mark must be unambiguous, done with the consent of patient, when patient is alert & awake, in the presence of his/her relatives. It must be visible after prepping and draping the patient and removed at the end of the procedure. Preoperative verification protocols have only been introduced in many parts of the world and found to reduce wrong site surgery.

Time out is the step when communication is to be done amongst all the team members by orienting the team to the individual patient, site of surgery, procedure to be carried out, alerting each member to potential complications and encouraging team members to inform others when they notice an error is occurring. Whether prophylactic antibiotic has been given pre-operatively is also to be confirmed during this step to avoid surgical site infection. Essential imaging display also has to be confirmed. When 2 or more procedures are performed on the same patient and the person performing the procedure changes, time out must be performed before each procedure.

Before patient leaves the Operating Room (*Sign Out*), counting of sponges, sharps and instruments must be given in an audible voice with minimal distraction. Surgical Specimen should be labelled properly including correct name of patient's, his ID number, specific origin of the specimen and laterality (e.g. Right buccal mucosa biopsy), quantity, descriptive information about the specimen (e.g. Suture tag for anatomical orientation of specimen) and required test to be done with the surgical specimen. Nursing staff should repeat back to the surgeon about the specimen being sent to the laboratory.

Factors affecting the acceptance of Checklist:

Although surgical safety Checklist is easy to use and has zero harm from its use, actively using health centers are less. Failure of its use can be due to the problem of hierarchy in O.R. Most of the surgeons consider themselves

that they can never be wrong. Surgeon may feel insulted by the search of potential error. Furthermore, culture of minimal communication and interruption of work in the Operating Room may be considered as hinderance of its use. There may also be economic objections, as it may be feared that operations will be prolonged and cost may go up. Litigation and confidentiality may be the other reasons that can affect implementation of check list.

Recommendations on the Implementation of WHO Surgical Safety Checklist

The checklist will meet the acceptance only if Surgery Team Leaders integrate it in their safety concept and take it seriously. Education and training for its use is necessary. Interdisciplinary communication helps to prevent conflicts in Operating Room. An audit of complication rates of every surgical department to evaluate the effect of checklist before and after implementation of checklist is also helpful. Once it comes in routine practice, checklist can be completed within two minutes in all its three parts.

Faulty implementation can give a dangerous false sense of security and thus convert the positive effect of checklist into its negative. It should not be considered just as a document to be filled for the record but each and every item should be followed as a team. It also helps to dismantle the hierarchical barriers and enables to improve frequent transfer of information and team cooperation.

By simply implementing checklists and protocols from developed countries to developing countries may show its actual benefits. WHO has recommended for the required changes in the checklist according to the place and as per the surgical branch without altering the most essential items in it so that the main purpose of checklist of achieving patient's safety will be followed. Health care system do most of the right things on most patients, most of the time. Safety culture in hospitals can make each one of us to do all the right things on all the patients all the time and Surgical Safety Checklist is one part of it.

Medicine is lot harder; safety culture techniques make it easier, more efficient and more safer.

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