

## Short Commentary

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# Patient Safety in the Surgical Process: The Circulating Nurse's Role

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### Abstract

Patient safety is of primary concern in all healthcare fields. Unintentional injury or “Never Events” occur in surgeries. During a surgical procedure it requires teamwork to ensure that all steps are taken to maintain patient safety. A major emphasis should be teamwork and leadership. While there are multiple sub-teams in the operating room, there must be a person to coordinate these sub-teams into a cohesive team where all members know the same information at the same time. This coordinator is the circulating nurse.

### Patient safety

Surgery has major implications for patients. The World Health Organization (WHO) has found that up to 25% of patients experience complications after surgery, with up to a 5% mortality rate after major surgery. At least half of these occurrences are considered preventable [9]. Pre-existing conditions, resources, preparation, and planning are all integral roles in patient safety, especially in preparing for unexpected events that can occur [4]. Potential “Sentinel or Never Events” (events that should never happen), must be recognized, and steps taken to mitigate their occurrence in a surgical environment [2]. Policies and procedures are developed within each surgical facility for the identification of the professional roles and responsibilities of each person in a surgical team. The WHO has developed universal perioperative checklists as a patient safety protocol, to help ensure that safe care is provided [2,6]. Surgical checklists reduce complications. Cabral et al [2] identified that specific areas where these checklists have demonstrated a reduction of complications and surgical mortality are from respiratory, cardiac, and infections. It has been demonstrated that the checklist is more effective when the surgi-

cal team reviews them as a team [9]. The surgical checklist developed by the WHO identifies and addresses specific time periods within a surgery. 1) before initiation of anesthesia, 2) before the initial incision, and 3) during wound closure. In order for the surgical checklist to be implemented, it is important that one person within the OR is designated as the checklist coordinator to ensure that all patient safety steps are reviewed at each phase of the surgery, with the responsibility to stop the surgery if a step is not satisfactorily addressed. This role is generally performed by the circulating nurse [2,6].

### Circulating nurse

The role of a Circulating Nurse is defined by non-technical skills (NTS). Redaelli I [7] in a 2018 ethnographic study categorized these skills as 1) leadership, 2) situation awareness, 3) task management, 4) communication, & 5) teamwork. These NTS will be discussed in reverse order, as leadership requires that the other four be attained for proficiency in leadership to occur. There are two tools that have been identified as ways to measure the non-technical skills. The Observational Teamwork Assessment for Surgery (OTAS) and Operating Theater Team Non-Technical

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Skills Assessment Tool (NOTECHS) [3]. While working in an interdisciplinary team, consisting of the surgeon, surgical assistants, anesthetist or anesthesiologist, and other healthcare professional staff, the position of Circulating Nurse in the operating room (OR) is as the patient's advocate while they are at their most vulnerable. It is this RN's responsibility to monitor the overarching activities within the OR theater. (S)He must assess the procedures and needs of the team, diagnose, and implement critical thinking and judgment to ensure that the patient receives the best possible, evidence-based care [7]. The circulating nurse is responsible for ensuring that the right people and equipment are in place for the right procedure. (S)He must remain intentional, organized, and flexible to meet the variabilities that happen within each surgery. This can be described as 'System Thinking', or the recognition of the many interactive activities that occur within the surgical theatre [4].

### **Teamwork**

Teamwork is the coordination of all surgical team members and sub-teams to facilitate the smooth progress of the surgery [7]. Team coordination is a major factor in providing safe, evidence-based care [4]. To this end, it is vital that the patient is provided with the opportunity to participate as part of the team [8]. [3] have identified three categories of team processes to improve collaboration, coordination, and communication. These categories are transition processes, action processes and interpersonal processes. Transition processes occur during the periods of time that occur between specific activities. These include pre-anesthesia, pre-incision, and pre-closure. According to the WHO, these should incorporate brief "time outs" for all team members within the surgical suite [6].

Action processes are the surgical activities. Progress must be monitored by each sub-team and reported to the circulating nurse to ensure that all members know the same information at the same time. This communication between all sub-teams and the circulating nurse is the interpersonal process throughout the surgery [3].

### **Communication**

Lack of communication, disrupted communication, or poor communication between surgical sub-teams are implicated as major causes of adverse events. Surgical equipment noise levels and non-essential conversations have been shown to be detrimental to intra-professional communication within the OR. Failure to control the noise within the OR has been shown to not only affect the ability of the sub-teams to hear each other, but also provide cognitive interruptions. These interruptions, especially when the information being conveyed is technical, unpredicted, or complex, leads to adverse events through technical and or medication errors [5]. Perioperative checklists have been shown to improve communication, positively affecting patient safety and outcomes [3,8,9].

Patient safety starts with communication preoperatively with the patient. This must include a review of the patient chart. The patient's medical history must be reviewed, to include allergies and pre-existing medical conditions. Are the appropriate lab work and x-ray images available? Has the patient signed the appropriate consents? Have all pre-op preparations been completed to in-

clude preoperative antibiotics, and deep vein thrombosis prophylaxis? To avoid the "Never Event" of wrong patient, wrong site, it is important that the patient be assessed, and identify the surgery planned, and the surgical site specifically marked preoperatively [8].

It is vital to patient safety in the OR that the circulating nurse have excellent verbal and non-verbal communication with the entire surgical team to ensure that all members of the team have the same information. This also includes communication with staff outside of the OR that can bring in equipment, supplies, and support when unexpected events require them [4,7].

### **Task management**

Task management starts with the planning and preparation of the surgical suite. This includes positioning the equipment within the OR to ensure that movement within the OR can be done safely, without breaking the sterile field. They must ensure that any equipment, instruments, accessories, and surgical supplies that could be needed for a specific surgery is easily accessible.

The Circulator must also be adaptable as surgical procedures may change suddenly [3,7].

A quick list of areas to be reviewed preoperatively that are crucial for patient safety are:

- Meet and assess the patient.
- Make sure the right procedure is planned,
- and the correct site marked.
- Review paperwork ... consent.
- Review lab work, and availability of blood products
- Xray availability in the OR
- Checking the settings and functioning of equipment that will be used
- Availability of instruments and supplies [4,7,8].

Anticipation, prioritization, problem solving, being pro-active, and adaptability are essential skills for the circulating nurse [4]. Urgent situations, interruptions and distractions during a surgery increases the risk of errors occurring. This is particularly true during initial counts, additions and removals of supplies and instruments, and closure counts [1,8].

### **Situational awareness**

It is imperative that the circulating nurse be prepared for the procedure that is scheduled, and for the potential unexpected occurrences. This should include all aspects within the OR, including the patient, surgical team, time, space management, instruments, equipment, and supplies [4,7]. Poor intra-operative situational awareness will lead to patient harm. Intraoperatively, the circulating nurse must:

- Continuous monitoring of all sub-teams within the OR
- Anticipating the scrub nurse's needs
- Assessing the progression of surgical tasks.

- Monitor and maintain an exact count of solutions, supplies, and instruments.
- Identify team members that might be in need of help, and be there
- Tracking time for all surgical team members [4,7,8].

The above list requires continual attention. Distractions are a major disturbance to situational awareness within the operating room. Non-essential interruptions, such as phone calls, beepers, and personnel should be minimized during surgeries [8].

### Leadership

It is essential that one person is identified to monitor and coordinate all activities within the OR theatre, to identify corrective actions needed, and provide the leadership to guide other team members to ensure these actions are put in place. This is an ongoing activity throughout the surgery, and embraces each of the NTS as identified [7]. The circulating nurse provides this leadership. Positive leadership provides improved performance of all of the sub-teams, and patient safety. Use of Patient Safety Checklists by the circulating nurse and the OR team, such as the one devised by the WHO is important to all identified NTS. The use of a simple checklist has been proven to decrease surgical morbidity and mortality [6,9].

### Conclusion

This paper has reviewed the role of the circulating nurse, their duties, obligations and responsibilities to expedite the process of surgery and potentiate patient safety. Teamwork is essential for positive surgical outcomes. Establishing the circulating nurse as the person responsible for preparing and ensuring that all sub-teams within the OR are aware of the same information at the same time is essential in improving patient safety during surgical procedures. Use of peri-operative checklists assists in ensuring that all areas identified are addressed.

### Declarations

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