An Innovative Approach to the Surgical Time Out: A Patient-Focused Model

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ABSTRACT

The surgical time out is an integral component of patient safety in OR settings. At The Center for Outpatient Surgery (TCOPS), a team of nurses and plastic and breast surgeons evaluated discrepancies, wrong-site surgeries, near misses, team communication, and patient satisfaction to develop and implement a surgical checklist that would help improve efficiency and patient safety and reduce near misses. This checklist involves the surgical team and patient, and it includes preoperative, preincision, and postoperative time outs. Since 2011, 4,453 procedures have used the preoperative and preincision timeouts. Of those, 998 have used all three when we added the postoperative component. Since the implementation of the checklist, there have been zero discrepancies and zero wrong-site surgeries. Patients have expressed satisfaction with their inclusion in the preoperative time out. Staff members at TCOPS have noted excellent results, and the checklist can be adopted by other specialties. *AORN J 103 (June 2016) 617-622. © AORN, Inc, 2016. http://dx.doi.org/10.1016/j.aorn.2016.04.001*

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The surgical time out is an essential component of patient safety in the OR. Personnel at many facilities add components to the surgical time out to fit the needs of their particular setting and to improve patient safety. Despite these efforts, some hospitals do not consistently comply with guidelines to prevent wrong-site surgery.[1] At The Center for Outpatient Surgery (TCOPS) in Tinton Falls, New Jersey, a team of surgeons and nurses developed a practical surgical time out that involves participation from patients, family members or caregivers, anesthesia care providers, nurses, and surgeons. Recent studies have suggested that involving a patient in the surgical time out can be a positive experience for the patient and staff members alike.[2,3] Therefore, the team at TCOPS decided to involve patients and their family members or caregivers in a preoperative time out. To help prevent wrong-site surgery and other potentially devastating complications, the team built a surgical checklist based on existing published checklists. The components of the new checklist include preoperative, preincision, and postoperative time outs that are geared toward the practice of plastic and reconstructive surgery but can be generalized to other surgical specialties.

Haugen et al[4] surveyed surgical team members regarding their experiences with near misses. Of 275 respondents, 38% reported experiencing uncertainty of patient identity, 81% experienced uncertainty about surgical site, and 60% experienced uncertainty about the correct procedure. A time out that involves participation from the patient, the patient's family members or caregivers, and all staff members involved

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in a procedure can improve team communication and may reduce team member uncertainty and near misses.

RATIONALE

The Joint Commission developed the Universal Protocol to guide surgical team members in preventing wrong-site, wrong-procedure, and wrong-patient surgery.[5] The Universal Protocol involves preprocedure verification, marking of the surgical site, and performance of a time out before surgery. Each surgical team member, including the surgeon, anesthesia care provider, RN circulator, and surgical technologist or scrub person, has a role in adhering to the Universal Protocol. Adherence to the Universal Protocol is one of The Joint Commission's 2016 National Patient Safety Goals.[5] The World Health Organization (WHO) developed a surgical safety checklist that involves verification of certain steps before anesthesia is induced, before a surgical incision is made, and before the patient leaves the OR.[6]

The team at TCOPS analyzed the Universal Protocol and the WHO checklist to structure the facility's surgical checklist, and they determined that one of the weaknesses of the facility's time-out process was the focus on the operating surgeon. If the surgeon was mistaken regarding the surgical site, equipment needed, or inclusion of a secondary procedure, this mistake could reverberate through staff members and remain undetected. One of the primary goals of the checklist was to have every person involved in the procedure agree on all critical aspects of the surgery before entering the OR and before the patient received any anesthetic agents. Oszvald et al[7] developed at their institution an advanced perioperative time out and checklist that emphasized the accountability of the entire surgical team, which eliminated wrong-site surgeries and markedly decreased the number of near misses. In one study analyzing wrong-site surgeries, the author noted improved communication among surgical team members and a near elimination of wrong-site surgeries by conducting the time out before the induction of anesthesia.[8] Using this approach, critical questions are aired and answered, and all participants in the surgery drive the conversation, so all team members are involved early in understanding the expectations for the procedure and postoperative care.

The impetus for developing this surgical checklist was the occurrence of near misses at TCOPS that could have been avoided by using a more thorough verification process. Staff members at TCOPS count administrative discrepancies, missing studies, incomplete tests, and a team member's lack of knowledge about the procedure as near misses. For example, if a team member asks which extremity is the surgical site before prepping while the patient is under anesthesia, it is considered a near miss. Instances in which the surgical time is extended because correct supplies are not in the OR are also considered near misses. An example of an administrative concern that is considered a near miss includes a patient chart that is missing patient history, results of physical examination, or consent documentation. After reviewing previous near misses, the team reached a consensus that too many important details were discussed by the team after the patient was anesthetized, and that discussing and addressing issues with the entire surgical team before the patient enters the OR would decrease near misses.

SPECIFIC AIMS

The TCOPS team developed a unique surgical checklist with the goal of including the patient and his or her family members or caregivers in the preoperative time-out process. The team hypothesized that this approach to the surgical time out would substantially reduce the number of near misses and wrong-site surgeries and render team communication more effective. This inclusive approach to the time out focuses on the patient and makes the staff members and family members as important as the surgeon in the preoperative time-out process.

METHODS

The TCOPS team proposed that an additional time out performed in the preoperative area before the patient enters the OR and before the patient receives preoperative medications or anesthetic agents would be the best way to ensure involvement from the patient and his or her family members or caregivers as well as all staff members involved in the patient's care. The participants who must assemble for this preoperative time out include the patient, the patient's family members or caregivers, surgeon, anesthesia care provider, RN circulator, preoperative nurse, and any nurse who is assigned to relieve the RN circulator later in the procedure (if available). Communication between surgical team members is the key to success using this approach. Generally, after a procedure is finished, the surgical team will discuss appropriate timing to meet in the preoperative area regarding the next procedure. If timing is not discussed, the operating surgeon may alert personnel at the front desk when he or she is ready for the preoperative time out, and the front-desk personnel then may assist in gathering the appropriate team members. The preoperative time out occurs during room turnover from the previous procedure, and the entire surgical team works efficiently to ensure this time out does not cause a delay. The small, intimate nature of the facility generally allows

coordination of this assembly in the preoperative area to be achieved efficiently.

The preoperative time out ensures that the surgical team is not reviewing important details of the procedure only seconds before the incision is made. This approach does not replace the standard time out completed before skin incision but expands on it. After the induction of anesthesia and before the incision is made, personnel perform a standard time out. The surgical team performs the procedure and then conducts a postoperative time out that is completed before the surgical team disassembles the sterile field and the anesthesia care provider awakens the patient from sedation.

Checklist Components

The new surgical checklist begins with a preoperative time out, during which the patient is fully alert without any form of sedation or anesthesia. Family members, caregivers, and significant others are included at the patient's discretion. The preoperative time out is performed with the surgical team in the patient's preoperative holding room. This preoperative time out begins with confirmation of the patient's identity, procedure, and site with the patient, including whether a secondary procedure (eg, scar revision) is scheduled. If any member of the team notes a discrepancy, it is discussed at this time.

The team asks the patient to confirm his or her allergies and reactions. When a procedure involving a breast is performed, the surgical team checks the results of mammogram or other breast imaging studies before entering the OR. The team discusses the availability of necessary implants and equipment for the procedure. The team reviews the patient's medical history, current medications, medical clearance, preoperative testing (eg, basic metabolic profile, complete blood count), antibiotics, consents (ie, surgical, blood products, anesthesia), and preoperative photographs. For reconstructive procedures, the team verifies that all preoperative photographs that are essential to the procedure are loaded on the OR computer and the projection system is functional.

The team reviews the last office-note dictation and description of the procedure. The patient and his or her family members or caregivers confirm the NPO status of the patient. The team asks the patient about the presence of metal implants and confirms with the patient whether he or she has used blood thinners and when they were discontinued. The preoperative nurse confirms the results of pregnancy testing for all female patients of childbearing age. The team assesses the patient for risk of deep vein thrombosis to determine what prophylactic measures should be taken. All members of the surgical team must confirm that the marking of the surgical site is appropriate by viewing the marking and verbally stating the location. The patient and his or her family members or caregivers confirm the date of the postoperative follow-up appointment. Additionally, postoperative prescriptions are confirmed and explained to the patient and his or her family members or caregivers at this time. All members of the surgical team, the patient, and his or her family members or caregivers are then given an opportunity to ask questions. After questions are addressed, the team signs the preoperative checklist (Figure 1), which is placed in the patient's chart, and then transports the patient to the OR.

After the patient is anesthetized and appropriately positioned and the surgical site is prepped, the team performs a standard preincision time out in the OR. The team confirms the patient's identity and discusses the planned procedure, anticipated critical events, anticipated blood loss, and patient safety concerns. The team once more confirms antibiotic prophylaxis and imaging. At the end of the procedure, before dismantling the sterile field, the team completes a postoperative checklist that confirms that the instrument, sponge, and needle counts are correct; the procedure performed matches the surgical consent documentation; specimens are properly labeled and collected; equipment needs are addressed; and any key concerns for recovery are discussed. In addition to addressing these components of the WHO surgical safety checklist,[6] during the postoperative time out, the team discusses anesthesia issues (eg, intraoperative hypertension), postanesthesia care unit (PACU) orders, the scheduling of the patient's postoperative appointment, and postoperative prescriptions. The team then signs a postoperative surgical checklist (Figure 2), which is placed in the patient's chart, where it can be a useful tool for PACU personnel to reference, if needed.

Accounting for implants, specimens, and secondary procedures is an essential part of the surgical checklist at TCOPS. Patients in this setting often undergo a major plastic surgery procedure but may also have a few additional nevi or a small scar revised at the time of surgery. After a prolonged primary procedure, it is possible for the surgical team to overlook a small component at the end of the procedure; therefore, confirming that the procedure has been performed before the sterile field is broken down is instrumental in avoiding near misses.

RESULTS

Since 2011, the surgical team at TCOPS has performed 4,453 procedures using the preoperative time out. The postoperative

The Center for Outpatient Surgery
Preoperative Surgical Checklist

	Yes/Explanation	N/A
Medications	☐	☐
Medical problems	☐	☐
Allergies • Reactions	☐	☐
Medical clearance	☐	☐
Electrocardiogram	☐	☐
Chest x-ray	☐	☐
Laboratory values	☐	☐
Procedure matches consent	☐	☐
Implants	☐	☐
Mammogram	☐	☐
Antibiotics • Time given	☐	☐
Valtrex • Given? • Time given	☐	☐
Consent • Surgery • Blood • Anesthesia	☐	☐
Pictures • Present and adequate	☐	☐
Last dictation	☐	☐
NPO status • Meal, fluid	☐	☐
Metal in body	☐	☐
Pregnancy test	☐	☐
Deep vein thrombosis risk score	Score:	☐
Marked • Surgical site, visible	☐	☐
Postoperative appointment	Day:_____	☐
Postoperative prescriptions	☐	☐
Questions	☐	☐

Date: _____ Time: _____

Team member signatures: _____

_____

_____

_____

Figure 1. The Center for Outpatient Surgery—developed preprocedure time out checklist, to be completed in the preoperative area. *Printed with permission from The Center for Outpatient Surgery, Tinton Falls, NJ.*

time out was developed and implemented in June 2014. Since the inception of the postoperative time out, the surgical team has performed 988 procedures. After implementing the total surgical checklist, there have been zero discrepancies between team members and zero wrong-site, wrong-side, or wrong-patient surgeries. Patients have informally expressed satisfaction regarding their participation in the surgical time-out process.

The surgical team frequently catches near misses with this surgical checklist. For example, the surgeon may be aware that a patient wants to have a benign nevus removed in addition to their primary procedure, but perhaps this has not been added to the surgical consent document or photographs of the nevus were not taken. Preoperative photographs may also be recognized as suboptimal and may need to be retaken immediately before surgery. Additions to the surgical consent document or acquisition of preoperative photographs are not possible after the patient undergoes anesthesia, but such needs can be addressed with the entire surgical team and patient during the preoperative time out. The postoperative time out has also helped the team avoid near misses regarding surgical omissions. For example, if a patient were scheduled to undergo a corticosteroid injection into an abdominal hypertrophic scar after her breast reduction has been performed, the team would catch this component during the postoperative procedure verification and would complete this procedure before the sterile field is contaminated or the patient emerges from anesthesia. The postoperative time out also allows all team members to understand the patient's postoperative course and

The Center for Outpatient Surgery
Postoperative Surgical Checklist

	Yes/Explanation	N/A
Procedure verified • Matches consent • Addresses revisions	☐	☐
Specimen labeling confirmed • Documented?	☐	☐
Anesthesia issues • Described • Documented?	☐	☐
PACU special instructions • Orders	☐	☐
Postoperative appointment and prescriptions verified • Date • Pharmacy	☐	☐

Date: _____ Time: _____

Team member signatures: _____
_____
_____
_____

Figure 2. The Center for Outpatient Surgery–developed postprocedure time out checklist, to be completed before leaving the OR. *Printed with permission from The Center for Outpatient Surgery, Tinton Falls, NJ.*

confirm important details (eg, postoperative pain medication) before entering the PACU.

DISCUSSION

The WHO surgical safety checklist and the Universal Protocol are two tools that have created a surgical environment that advocates for patient safety.[9] Their implementation marked the beginning of a new era in avoiding wrong-site, wrong-procedure, and wrong-patient surgeries. The surgical checklist implemented at TCOPS expands on the traditional time out to address common patient safety issues. Despite the development of variations of the surgical time out, one study suggested that as few as 13% of time outs (N = 80) are performed properly.[10] In another institution's prospective study, team members were absent during the time out in 40% of procedures, and team members failed to pause at a time-out checklist item in 70% of procedures (N = 565).[11]

The surgical team at TCOPS believes the new checklist has reduced the potential perpetuation of errors that can exist when the entire surgical team is not well informed. Relief staff members enter the OR with the same knowledge as everyone already participating in the procedure, because they are included in the preoperative time out when possible. No team member leaves the OR with confusion about the postoperative course. Staff members at TCOPS have observed that the surgical checklist appears to minimize surgical mistakes, improve efficiency, enhance surgical team communication, elevate surgical team confidence, and increase patient safety by focusing the time out for the patient and everyone involved in the surgery. The postoperative addition to the time out appears to decrease team confusion, minimize postoperative mistakes in the PACU, secure surgical specimens, catch secondary procedures before the cessation of anesthesia, and maximize the efficiency of postoperative care.

A number of studies have shown that the surgical time out incorporates several measures that systematically decrease near misses and sentinel events and improve surgical outcomes.[12-16] The team at TCOPS has built on the WHO surgical checklist and the Universal Protocol based on events that repeatedly affect team members at the facility. Patients report feeling more autonomous in their surgical experience. Surgeons feel that accountability is now shared in the OR. Instead of functioning as an attempt to catch issues immediately before incision, the surgical checklist functions as a detailed, focused analysis of all aspects of a successful surgery.

Limitations

This change took place at one institution and has not been generalized to other settings. The study is retrospective in its analysis. This time-out schedule may be difficult to implement at institutions that do not have the same support structure or resources to implement it. The small size of the TCOPS team and facility allows for easy communication between staff members and coordination of the preoperative time out, but surgical staff members at larger facilities may experience difficulty organizing a similar approach. In addition, data related

to the checklist's effect on patient and staff satisfaction, communication, near misses, efficiency, and compliance have not been formally collected and analyzed.

CONCLUSION

Since the inception of the preoperative and postoperative time outs at TCOPS, the team has observed a substantial decrease in administrative issues, suboptimal surgical photographs, and incorrect equipment or implants. In addition, no discrepancies between team members or wrong-site surgeries have occurred. Discussing the proposed agenda for the surgery with the patient in a presedation condition with all team members and family members or caregivers present has been helpful in enhancing patient safety at TCOPS. This surgical checklist should be considered by personnel in other specialties because staff members at TCOPS have noted excellent results.

Editor's note: *The Universal Protocol for Preventing Wrong Site, Wrong Procedure, and Wrong Person Surgery is a trademark of The Joint Commission, Oakbrook Terrace, IL.*

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