

ENGAGE WITH QUALITY IMPROVEMENT AND PATIENT SAFETY (E-QIPS)

# The Time Out Engagement and Standardization Initiative



American  
Urological  
Association

## QUALITY OR SAFETY PROBLEM

The World Health Organization implemented a surgical safety checklist in 2008 in response to adverse events in the operating room, which is now termed the surgical time out (TO). While the benefits of the TO both as a patient safety tool and as a mediator of culture change, have become apparent, implementation across operating rooms both nationally and internationally has been fraught with difficulty. We hypothesize application of the LEAN principle of standardization to the TO in order to make the TO an active process rather than a passive process will result in improved compliance and engagement of the surgical team.

## BACKGROUND

Prior to the intervention, engagement varied with nurse participating in 100% compared to anesthesia provider or surgeon participating in 18%. No TO included all 15 elements and only 13% of elements were standardized across TOs. Overall, 40% of the elements were discussed in 80% of TOs. Ideal practice would engage all members of the surgical team including nursing staff, anesthesia providers, and the operating surgeon. Additionally, all TOs would include the same elements for every patient, to ensure no critical discussion lapses prior to surgical incision.

Barriers to implementation include lack of surgeon engagement, perceived delay in care, increased workload, and a culture of hierarchy.<sup>1, 2, 3, 4, 5</sup> Given these barriers, studies have identified areas of drift and poor adherence to the surgical time out.<sup>6, 7, 8</sup> Given these barriers, TO implementation has potential areas for improvement including compliance, standardization, engagement, and effectiveness.<sup>1, 9, 10, 11</sup> Quality improvement initiatives based on these pillars of implementation have shown success to improve a subset of these barriers.

LEAN production methodology in healthcare has been used as a framework for quality improvement project development and implementation strategies. Key principles of LEAN production include continuous improvement and standardization. Standardization in the operating room is known to improve communication, efficiency, and reduce serious safety events. Using LEAN to standardizing the time out contents and interaction provides an opportunity for standardized engagement with the TO.

## PROJECT OBJECTIVES

The objective of this initiative was to increase engagement and standardization of the surgical time out.

The aims of this project are as follows:

1. Define the standard content required for every surgical time out
2. Devise a format for the time out, to promote engagement from all team members
3. Create a reliable auditing system for long term sustainability.

**INTERVENTION**

The intervention involved creation of a standardized time out checklist, through collaboration with nursing, anesthesia, and surgeon faculty. This check list captured 15 content elements identified as the necessary components of a time out. Next, an interactive time out model was created where team members from nursing, anesthesiology, and surgery would be required to participate in the time out. Elements of the time out were assigned to the appropriate service line, as they pertain to their specific role in the operating room. A visual time out board was drafted with three columns, each denoting the responsibility of a service to a section of questions pertaining to the time out (Figure 1). The intervention included both posting the time out board template and encouraging all responsible staff members to write on the time out board prior to the formal time out. Therefore, educational campaigns to anesthesiology providers, operating room nursing staff, surgeons, and residents commenced regarding using the time out board.

To identify best practices, a focus group of operating room team members was held to create a standardized operating procedure (SOP) regarding utilization of the time out board. The SOP flowed as follows. 1. A member of each team would fill out their respective columns prior to anesthesia induction. 2. At the timeout, each member would read their column in order from left to right.

Figure 1:

<h1 style="margin: 0;">Time Out</h1>		
Circulating Nurse	Anesthesiology	Surgeon
<input type="checkbox"/> Patient Name: <input type="checkbox"/> Patient SSN:  <input type="checkbox"/> Procedure:  <input type="checkbox"/> Patient's Consent Matches Procedure <input type="checkbox"/> Laterality: Right Left NA <input type="checkbox"/> Site Marked: Yes No  <input type="checkbox"/> Positioning Correct <input type="checkbox"/> Bed Correct  <input type="checkbox"/> Implants/Equipment <input type="checkbox"/> Present <input type="checkbox"/> Expiration <input type="checkbox"/> No Bioburden <input type="checkbox"/> Indicators have changed  <input type="checkbox"/> COVID Status:  <input type="checkbox"/> Fire Risk  <input type="checkbox"/> Images available and projected <input type="checkbox"/> DVT Prophylaxis <input type="checkbox"/> Mechanical: SCD <input type="checkbox"/> Medication: SQH <input type="checkbox"/> Other:  <input type="checkbox"/> Nursing Concerns:	<input type="checkbox"/> Allergies:  <input type="checkbox"/> Preoperative antibiotics:  <input type="checkbox"/> Agent:  <input type="checkbox"/> ASA Class:  <input type="checkbox"/> Other Medications Given:  <input type="checkbox"/> Anesthesia Concerns:	<input type="checkbox"/> STOP  <input type="checkbox"/> Turn off the music  <input type="checkbox"/> Introduce All Team Members  <input type="checkbox"/> Procedure:  <input type="checkbox"/> Laterality: Right Left NA  <input type="checkbox"/> Special Equipment/Implants needed:  <input type="checkbox"/> Expected Specimens:  <input type="checkbox"/> Anticipated critical steps:  <input type="checkbox"/> Potential for significant blood loss: <input type="checkbox"/> Low <input type="checkbox"/> High  <input type="checkbox"/> Type and Screen: Yes No  <input type="checkbox"/> Please alert me if:  <input type="checkbox"/> Surgeon Concerns:
 		

**MEASURES OF SUCCESS**

Metrics of success included engagement and adherence to the standardized content. Therefore, time outs were audited and scored based on staff participation and how many of the 15 elements were discussed during the time out.

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**OUTCOMES**

Post-implementation of TOES, nursing, anesthesia, and surgeon participated in 100% of TOs. The 15 standardized elements of the TO were discussed 90% of the time (Figure 2). Voice of the customer audits revealed widespread acceptance of the active TO (Table 1).

Figure 2: Percentage each element was discussed pre and post intervention.

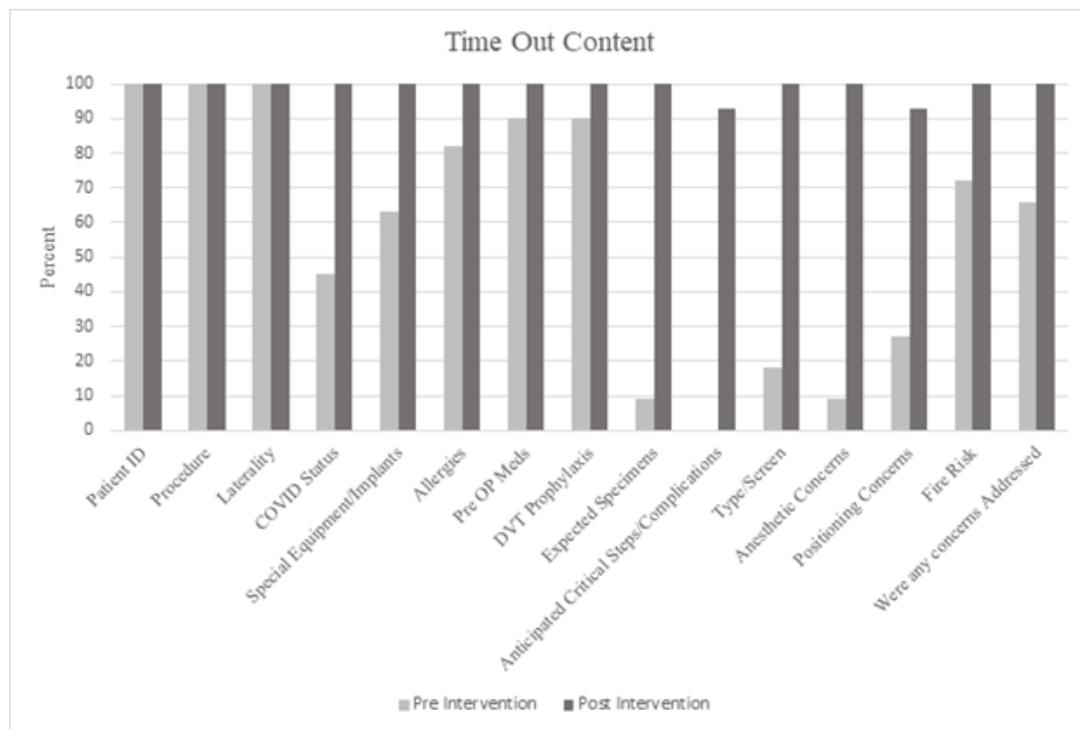


Table 1

Nursing	Anesthesia Provider	Surgeon
“There is more conversation regarding the patient from all team members”	“We were able to identify a misaligned plan regarding pre-operative antibiotics before the patient was asleep”	“The interactive time out increases communication between the operating surgeon and everyone else in the room”
	“I like it, it gives me a chance to review patient cardiac history with the team”	“It gives me a designated time to review critical steps with the anesthesia provider”

**POTENTIAL IMPACT AND SCALABILITY**

Locally, the standardized visual time out board has been utilized in three operating rooms, with good success. Successful adoption of this practice requires adequate buy in from all three participating services and accountability between them. This intervention can be scaled to improve practice nationally to encourage engagement and transform the time out into an active conversation between surgical staff, and ensure all necessary elements are discussed for every patient procedure.

## SUSTAINING THE CHANGES

This change is sustained due to regular auditing. Initially, TOs were audited daily to identify barriers to successful implementation. After 2 weeks, spot audits were employed for 2-3 procedures weekly. An perioperative staff member was trained in auditing procedures, and results were reviewed weekly to determine if implementation changes needed to be made. This auditing structure has led to 4 months of sustainment to date.

## KEY SUMMARY

- a. Transitioning the time out from a passive to an active process, through team engagement, enhances fidelity and compliance with the surgical time out.
- b. Standardization of the time out ensures critical content elements are discussed at every time out, for every patient procedure in the operating room setting.
- c. Using LEAN methodologies, specifically standardization, visual management, and auditing, implementation of the TOES initiative is achievable and sustainable within the operating room.

## PROJECT LEAD CONTACT INFORMATION

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## REFERENCES

1. Papadakis M, Meiwandi A, Grzybowski A. The WHO safer surgery checklist time out procedure revisited: Strategies to optimise compliance and safety. *Int J Surg*. 2019 Sep;69:19-22. doi: 10.1016/j.ijssu.2019.07.006. Epub 2019 Jul 13. PMID: 31310820.
2. Russ S, Rout S, Caris J, Mansell J, Davies R, Mayer E, Moorthy K, Darzi A, Vincent C, Sevdalis N. Measuring variation in use of the WHO surgical safety checklist in the operating room: a multicenter prospective cross-sectional study. *J Am Coll Surg*. 2015 Jan;220(1):1-11.e4. doi: 10.1016/j.jamcollsurg.2014.09.021. Epub 2014 Oct 12. PMID: 25456785.
3. Vats A, Vincent C A, Nagpal K, Davies R W, Darzi A, Moorthy K et al. Practical challenges of introducing WHO surgical checklist: UK pilot experience *BMJ* 2010; 340 :b5433 doi:10.1136/bmj.b5433
4. Vats, A.; Marbaniang, M.; Gupta, P. Does the safe surgery check list delay the start of the theatres?, *European Journal of Anaesthesiology*: June 2011 - Volume 28 - Issue - p 11
5. Jain D, Sharma R, Reddy S. WHO safe surgery checklist: Barriers to universal acceptance. *J Anaesthesiol Clin Pharmacol*. 2018;34(1):7-10. doi:10.4103/joacp.JOACP\_307\_16
6. McLaughlin N, Winograd D, Chung HR, Van de Wiele B, Martin NA. University of California, Los Angeles, surgical time-out process: evolution, challenges, and future perspective. *Neurosurg Focus*. 2012 Nov;33(5):E5. doi: 10.3171/2012.8.FOCUS12255. PMID: 23116100.
7. Igaga EN, Sendagire C, Kizito S, Obua D, Kwizera A. World Health Organization Surgical Safety Checklist: Compliance and Associated Surgical Outcomes in Uganda's Referral Hospitals. *Anesth Analg*. 2018 Dec;127(6):1427-1433. doi: 10.1213/ANE.0000000000003672. PMID: 30059396.
8. Johnston G, Ekert L, Pally E. Surgical site signing and "time out": issues of compliance or complacency. *J Bone Joint Surg Am*. 2009 Nov;91(11):2577-80. doi: 10.2106/JBJS.H.01615. PMID: 19884430.
9. Soria-Aledo V, Da Silva ZA, Saturno PJ, Grau-Polan M, Carrillo-Alcaraz A. Dificultades en la implantación del check list en los quirófanos de cirugía [Difficulties in implementing a surgical check list in operating theatres]. *Cir Esp*. 2012 Mar;90(3):180-5. Spanish. doi: 10.1016/j.ciresp.2011.09.007. Epub 2012 Feb 11. PMID: 22326212.
10. Rydenfält C, Johansson G, Odenrick P, Åkerman K, Larsson PA. Compliance with the WHO Surgical Safety Checklist: deviations and possible improvements. *Int J Qual Health Care*. 2013 Apr;25(2):182-7. doi: 10.1093/intqhc/mzt004. Epub 2013 Jan 18. PMID: 23335056.
11. Freundlich RE, Bulka CM, Wanderer JP, Rothman BS, Sandberg WS, Ehrenfeld JM. Prospective Investigation of the Operating Room Time-Out Process. *Anesth Analg*. 2020 Mar;130(3):725-729. doi: 10.1213/ANE.0000000000004126. PMID: 30896592; PMCID: PMC6813865.