Changing Operating Room Culture: Implementation of a Postoperative Debrief and Improved Safety Culture

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■ BACKGROUND: **Patient safety is foundational to neurosurgical care. Postprocedural "debrief" checklists have been proposed to improve patient safety, but data about their use in neurosurgery are limited. Here, we implemented an initiative to routinely perform postoperative debriefs and evaluated the impact of debriefing on operating room (OR) safety culture.**

■ METHODS: **A 10-question safety attitude questionnaire (SAQ) was sent to neurosurgical OR staff at a major academic medical center before and 18 months after the implementation of a postoperative debriefing initiative. Rates of debrief compliance and changes in attitudes before and after the survey were evaluated. The survey used a Likert scale and analyzed with standard statistical methods.**

■ RESULTS: **After the debrief initiative, the rate of debriefing increased from 51% to 86% of cases for the neurosurgery service. Baseline SAQ responses found that neurosurgeons had a more favorable perception of OR safety than did anesthesiologists and nurses. After implementation of the postoperative debriefing process, perceptions of OR safety significantly improved for neurosurgeons, anesthesiologists, and nurses. Furthermore, the disparity between nurses and surgeons was no longer significant. After debrief implementation, neurosurgical OR staff had improved perceptions of patient safety compared with surgical services that did not commonly perform debriefing. Debriefing identified OR efficiency concerns in 26.9% of cases, and prevention of potential adverse events/near misses was reported in 8% of cases.**

■ CONCLUSIONS: **Postoperative debriefing can be effectively introduced into the OR and improves the safety culture after implementation. Debriefing is an effective tool to identify OR inefficiencies and potential adverse events.**

INTRODUCTION

Surgical checklists have been shown to improve perioperative morbidity and mortality.[1] Importantly, these checklists provide an avenue for all members of the healthcare team to efficiently and effectively communicate with one another. In the operating room (OR), breakdown in communication can lead to frustration, efficiency problems, and dangerous situations. To prevent such issues, the World Health Organization (WHO) has posted guidelines on incorporation of safety checklists to improve morbidity and mortality.[2]

In addition to the widely adopted preprocedural "time-out" checklist, there is evidence for use of a postprocedure "debrief" checklist at the end of the procedure to standardize communications for OR team members at the end of the surgical case.[3-6] Previous studies have demonstrated that a debrief can prevent sentinel events such as retained foreign objects and can reduce morbidity and mortality.[6] In addition, incorporation of efficiency data and issue resolution into the debrief, as supported by the WHO guidelines,[2,5] may serve as a mechanism to improve OR efficiency. Debriefing is also an important part of resident

Key words
- Checklist
- Debriefing
- Efficiency
- Operating room communication
- Patient safety
- Postoperative debrief
- Safety

Abbreviations and Acronyms
OR: operating room
WHO: World Health Organization

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Table 1. University of California San Francisco Postoperative Debrief Checklist

Procedure(s); diagnoses
Wound classification
Fluid input/output; estimated blood loss
Significant laboratory studies and medications given: need for redosing
Disposition: recovery/ICU
Airway management: intubated/extubated
Postoperative management care orders: e.g., imaging, laboratory studies, pain management, drains
Operative specimen: surgeon verifies name, number of specimen jar(s), correct container, and label matches pathology form
Surgical counts: sponges, needles, instruments, manual count verified
Fluoroscopy: imaging reviewed for unexpected retained objects
Other OR team member(s): e.g., neuromonitoring, cell saver, perfusion
OR efficiency issues, delays, or safety concerns

ICU, intensive care unit; OR, operating room.

education and surgical training[7] because it is an effective vehicle for feedback and trainee learning.[8,9] However, published data are very limited on methods for effectively implementing a postoperative debrief program, or the effect of debriefing on surgical outcomes and the OR safety environment/culture, particularly within neurosurgery.[10]

In May 2014 the University of California San Francisco (UCSF) Department of Neurosurgery launched the OR Postoperative Debrief Project. The Department of Neurosurgery was the first UCSF surgical department to make a concerted effort to implement surgical debriefing as part of routine care.[11] The goals of the debrief process were to 1) standardize communication between OR team members at the end of every surgical case and 2) provide a system to track underlying reasons for OR efficiency problems or patient

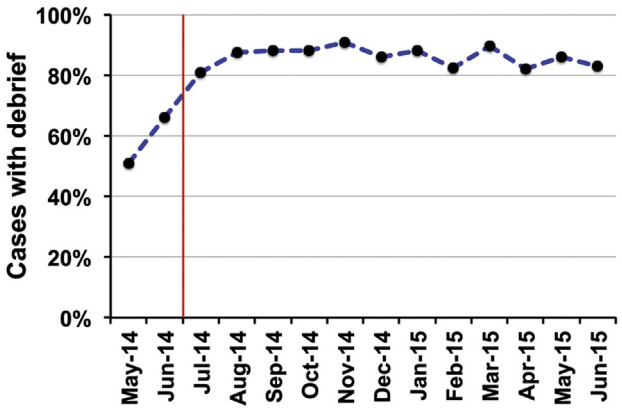

Figure 1. Trend of postoperative debrief compliance in neurosurgery. Percentage of cases with postoperative debriefing over time is shown over time in months. The *red line* indicates when the resident-led quality improvement project to improve postoperative debrief compliance with a goal >80% was initiated.

Table 2. Baseline Safety Attitude Questionnaire Results

	All	Surgeons	Anesthesia	Nurses	Other
Number (%)	112	30 (26.8)	34 (30.4)	42 (37.5)	6 (5.4)
SAQ-OR responses (% agree slightly or agree strongly)					
Nurse input about patient care is well received in the OR	83.0%	100.0%*†	76.5%*	78.6%†	66.7%
In the OR, it is (NOT) difficult to discuss errors	59.8%	76.7%*†	41.2%*	57.1%†	100.0%
Briefings at the end of procedures in the OR are common	33.9%	43.3%*	23.5%*	35.7%	33.3%
I am encouraged by my colleagues to report any patient safety concerns I may have	74.1%	90.0%*	50.0%*‡	81.0%‡	83.3%
In the OR here, it is (NOT) difficult to speak up if I perceive a problem with patient care	80.4%	86.7%*	73.5%*‡	78.6%‡	100.0%
The physicians and nurses here work together as a well-coordinated team	76.8%	93.3%*†	79.4%*	61.9%†	83.3%
All the personnel in the ORs here take responsibility for patient safety	77.7%	90.0%*†	73.5%*	69.0%†	100.0%
Important issues are communicated at the end of the procedure	66.1%	86.7%*†	50.0%*	61.9%†	83.3%
I would feel safe being treated here as a patient	78.6%	96.7%*†	79.4%*	64.3%†	83.3%
Patient safety is constantly reinforced as a priority in the ORs here	69.6%	96.7%*†	50.0%*	64.3%†	83.3%
Average SAQ-OR score (1 = disagree strongly; 5 = agree strongly)	3.77	4.29*†	3.42*	3.61†	4.15

SAQ, Safety Attitude Questionnaire (negative questions inverted for agreement); OR, operating room.
*Surgeon significantly different from Anesthesia.
†Surgeon significantly different from Nurse.
‡Anesthesia significantly different from Nurse ($P < 0.05$, Wilcoxon rank sum).