Benefits of a surgical safety checklist for otolaryngology patients

Introduction

The volume and complexity of knowledge today has exceeded any single individual’s ability to manage it consistently without error despite advances in technology, years of training, and specialization of functions and responsibilities. Checklists have been employed since the 1930s in aviation and high-risk industries to prevent accidents caused by human error. Only recently has there been sufficient evidence that surgical safety checklists as a quality measure in 2016. Thomas Jefferson University Hospital implemented the WHO surgical safety checklist to assess perceptions of operative safety and teamwork among nurses, and anesthesiology house staff. Furthermore, limitations of surgical safety checklists in the quality of care and communication in the OR, self-perceptions of teamwork and communication improved. The identification of checklist failures improved primarily by establishing open dialogue at the site of the care. This promoted sharing of case information and activities, which helped identify knowledge gaps, improved interdisciplinary decision-making, and enhanced a “team feeling.”

The WHO developed the first surgical safety checklist for use in the operating room in 2009. Since then, many hospitals have adopted and implemented checklists to improve patient outcomes (Coughlin, Bioth, & Unger, 2016). The volume and complexity of knowledge today has exceeded any single individual’s ability to manage it consistently without error despite advances in technology, years of training, and specialization of functions and responsibilities. Checklists have been employed since the 1930s in aviation and high-risk industries to prevent accidents caused by human error. Only recently has there been sufficient evidence that surgical safety checklists as a quality measure in 2016. Thomas Jefferson University Hospital implemented the WHO surgical safety checklist to assess perceptions of operative safety and teamwork among nurses, and anesthesiology house staff. Furthermore, limitations of surgical safety checklists in the quality of care and communication in the OR, self-perceptions of teamwork and communication improved. The identification of checklist failures improved primarily by establishing open dialogue at the site of the care. This promoted sharing of case information and activities, which helped identify knowledge gaps, improved interdisciplinary decision-making, and enhanced a “team feeling.”

Methods

The Department of Otolaryngology – Head & Neck Surgery at TUIU created and implemented a surgical safety checklist that is compiled and reviewed with members of the surgical team, including nursing, anesthesia and the surgeon, prior to bringing each patient to the operating room. The checklist is completed in addition to the institution-wide mandatory surgical time-out and reviews items not included in the timeout, including airway concerns, bed positioning and special equipment needs. A full list of the elements reviewed is included in Figure 1. Before implementation, the department reviewed the potential benefits and concerns, leading to a discussion and approval by the surgical teams.

An 8-question survey using a Likert scale was adapted from the Safety Attitude and Climate Questionnaire (SACQ) (Director, 2004). The survey was administered to nurses, anesthesiologists and anesthesiologist-anesthetists prior to and one month following pilot implementation of the preoperative checklist.

Statistical analysis was performed using R. The comparison of pre- and post-implementation total survey scores was analyzed by general linear regression with potential predictors of safety, survey year and specialty. The survey scores for each question were analyzed using cumulative probability or adjacent-category units for the ordinal responses, with potential predictors of specialty, survey, gender and practice year. A value of alpha < 0.05 was considered significant.

Results

Seventy-five pre-implementation (22 otolaryngology, 42 anesthesiology, and 11 nursing) and 74 post-implementation (26 otolaryngology, 31 anesthesiology, and 17 nursing) surveys were completed. There was no significant demographic difference between the cohorts completing the pre-implementation and post-implementation surveys. Further respondent information can be viewed in Table 2.

Pre- and post-implementation safety attitude scores are presented in Table 2. No significant improvement in attitude scores were noted between pre- and post-implementation surveys.

Discussion

Checklists have been increasingly adopted in order to improve patient safety. We plan to reassess the OR staffs’ perception of safety and teamwork 6 months post-implementation to reassess for improvements in perceptions of safety and teamwork.

Conclusion

The surgical safety checklist for otolaryngology patients customizes the WHO checklist to increase teamwork and communication among otolaryngologists, anesthesiologists and nurses. It is important to note that the checklist is not a panacea or silver bullet, but it is an important tool to ensure successful implementation for the success of the checklist and to ensure that it is used in “true fashion” rather than being simply checked off the list. As we plan to implement the checklist for otolaryngology nurses at 6 months post-implementation to reassess for improvements in perceptions of safety and teamwork, we will begin to view the success of improvement such as operative time and surgical costs to demonstrate improved efficiency, as well as begin analyzing the rate of unplanned difficult airways as a measure of operative safety.

References


