

■ clinical contributions

2004 Lawrence Transfer Award Winner

KP Northwest Preoperative Briefing Project

By Maureen Ann Wright, MD

Abstract

In June 2001, members of the KP Northwest Region (KPNW) Patient Safety Team attending a Human Factors training program considered the patient safety challenges faced in the operating suite and identified preoperative briefing as a necessary component of safe practice. After receiving the Human Factors training, the KPNW Patient Safety Team obtained sponsorship for a pilot project to develop preoperative briefing as a way to transform the patient safety culture in the KP Northwest Region's operating suites and to reduce the number of errors (especially burns). The project led to the KP Sunnyside Medical Center's current policy requiring preoperative briefing before each surgical intervention so that information regarding the patient's care is verified and shared.

Since initiation of the preoperative briefings—which are increasingly being conducted on a routine basis—a trend of decreasing accidental injuries has been observed in the operating suite. In addition, recent questionnaire responses show an improved team culture of safety and an improved overall work climate (including such factors as teamwork, safety, perceptions of management, and working conditions). Measures reported by surgical teams in Orange County (California) and KPNW indicate the project can be transferred successfully. Staff are also expanding the briefings project to the ambulatory setting.

Introduction

Beginning in 1998, the Risk Management Department in the Kaiser Permanente Northwest Region (KPNW) identified an increasing trend of accidental burns in the operating suite at the Kaiser Permanente (KP) Sunnyside Medical Center. Accidental burns occurred for a variety of reasons, including failure to place caution devices into a holster after using them to make incisions. To address the issue, a committee consisting of members of the Risk Management, Quality, Surgical, Anesthesiology, and Patient Safety departments analyzed reasons for burns and found no correlation be-

tween burn events and individual physicians, operating suite staff, medical specialty, or time of day.

As awareness of this specific issue was building at the KP Sunnyside Medical Center, the broader concept of patient safety was gaining widespread attention. The 1999 publication of the Institute of Medicine's landmark report *To Err is Human*¹ highlighted the scope and scale of error in the delivery of health care and suggested that the health care industry turn to other industries, such as aviation and manufacturing, for ideas to reduce the widespread epidemic of medical error.

This growing interest in patient safety brought increased attention to the human factors that contribute to error. The term "human factors" encompasses the physiological, psychological, and environmental factors that sometimes lead to preventable accidents and avoidable error. These human factors may interfere with team communication and performance when diffuse responsibility results in system failures; when information is not shared so that staff can learn from one another; or when team members are unwilling to voice concerns (ie, because they fear challenging the existing workplace hierarchy).

Human Factors and the Origin of the Preoperative Briefing Project

In June 2001, at a national KP Human Factors Training Program in Oakland, California, members of the KPNW Patient Safety Team considered the patient safety challenges faced in the OR and identified preoperative briefing as a necessary component of safe practice.

The concept of "briefing" describes a dialogue or discussion between two or more people using concise and relevant information to promote clear and effective communication. The premise behind briefings is that it is much easier to monitor and raise issues related to the plan if you are familiar with it, have identified the desired outcome, and know that your input will be welcomed.

The briefing concept is used effectively by other high-risk, high-reliability industries and health care teams. The most widely recognized type of briefing is the pre-flight checklist used by airline pilots; in both the avia-

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tion industry and the health care setting, the dual purpose of briefing is to predict events (ie, avoid surprises) and to create team ownership of the outcome.

After receiving the Human Factors training, the KPNW Patient Safety Team obtained sponsorship for a pilot project to develop preoperative briefing as a way to transform the patient safety culture in the region's operating suites and to reduce the number of errors, especially burns. More specifically, the Preoperative Briefing Pilot Project had a four-part purpose:

- To decrease the number of accidental injuries occurring in the operating suite;
- To elucidate the nature and causes of human error in high-performance, high-risk workplace settings;
- To examine threat and error countermeasures, presenting such measures as clinically relevant, useful skills that can be learned; and
- To learn to effectively use core human factors skills to improve patient safety.

Champions for the project were Maureen Wright, MD, Medical-Legal Chief and Patient Safety Cochair; Farah Pakseresht, RN, Surgical Services Director; Melvin Goldstein, MD, Chief of Anesthesiology, KP Sunnyside Medical Center; and most recently, Steve Lieberman, MD, Chief of Urology. The Patient Safety Oversight Committee (a joint Kaiser Foundation Health Plan (KFHP) and Northwest Permanente Medical Group (NWPMG) committee) sponsored the group.

Components of the Pilot Project

The NWPMG and the Surgical Operation leadership at the KP Sunnyside Medical Center began the pilot project by granting time for all medical and nonmedical operating suite staff to attend one of two half-day training sessions given in October 2001. The briefing tools used during these training sessions were developed by the KP Program Offices in collaboration with the Center of Excellence for Patient Safety Research and Practice at the University of Texas. Concepts and briefing tools used in Crew Resource Management for commercial airlines were adapted for use with physicians, nurses, and staff. The key concept of the training tools was that the entire team must be included in the briefing process.

In November 2001, Farah Pakseresht, RN, and Dr Goldstein informed all surgical staff at the KP Sunnyside Medical Center via meetings, notices, and e-mail that all reported burns would be subject to a system analysis. Unless a

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burn resulted from a deliberate breach of rules, no punitive action would be taken. Simultaneously, KPNW began an ongoing process of tracking and analyzing trends in close calls and burn-related events in the operating suite, and the quality assurance (QA) team began conducting subsequent system analysis of these events.

As a matter of regular procedure in the pilot project, the briefing included the entire surgical team: the surgeon, the surgical assistant, the anesthesiologist, the scrub nurse, and the circulating nurse. At each briefing, the surgical team reviewed key issues of the case, including medical background, potential risks, and other pertinent information. For reference, briefing questions were also posted on the wall in the operating suite. The circulating nurse kept a record of the briefing and submitted this record with the intraoperative record. The briefing record was not part of the patient's medical record but was included in the monthly compliance data.

Although the questions provide the framework for the briefing, two core principles define the tone of the briefing sessions. The first principle is that all team members are expected both to request and to offer input. The second principle is to facilitate clear and effective communication by asking team members to use first names and to make eye contact with the person they are addressing.

After the project was underway, the project champions formed a broader project team to facilitate culture change. This team consisted of a surgeon, a nurse anesthetist, a surgical assistant, an operating suite technologist, an operating suite nurse, and the educator. For educational purposes, the group produced a briefing video comparing two scenarios: the "normal chaos" of a typical operating suite and the organized process of briefing. The video gave the surgical team a new perspective on patient safety. Soon, staff began to share errors and near misses during the morning report. All errors were reviewed with those involved, and lessons were shared with the entire team. Much effort went into reviewing issues of skin integrity and burns. In addition, safety rounds were conducted, and staff were

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asked for their input regarding other ideas to increase safety in the operating suite.

Methods for Measuring Project Results

To measure results of the project, the Safety Attitude Questionnaire (SAQ)² was administered before the training and then again eight months after the training. This attitudinal survey collects input from frontline personnel to determine strengths and weaknesses in the organization. The survey evaluates six domains: job satisfaction, teamwork, safety climate, perceptions of management, stress recognition, and working conditions. The first survey was distributed to all medical and nonmedical staff who practiced at the KP Sunnyside Medical Center before the project was launched. Periodic updates were conducted, and outcomes were shared with all staff.

The rate of accidents (ie, burns) in the operating suite was also analyzed. In addition, use of briefing in the operating suite was periodically audited by both the operating suite manager and the operating suite educator. One formal audit for compliance was performed two years after the project was launched. Reported burns were examined on a monthly basis by the Risk Management and Quality Assurance Departments through the Patient Safety Reporting System.

Project Results

Analysis of accidental injury in the operating suite reported since initiation of the preoperative briefings (in November 2001) suggests a decreasing trend: Whereas seven clinically significant injuries were reported in 2000 and nine such injuries were reported in 2001, five were reported in 2002, two were reported in 2003, and none were reported in 2004.

Results of the most recent administration of the SAQ showed an improved team culture of safety. When the SAQ was administered initially (in October 2001, before the pilot project began), more than 80% of operating suite staff stated their belief that briefing was important, but only 24% of staff reported that this briefing was done routinely; in the spring of 2003, 64% of SAQ respondents reported that briefing was done routinely. These results show that briefings had become 2.5 times more common in the operating suite than they were before the pilot project was initiated.

In addition to this substantial shift in safety culture and increase in the frequency of briefings, a decrease in the number of accidental burns was noted and was sustained during the three-year period during which

results were measured. Moreover, the only burns reported in 2003 were minor skin redness—a finding that shows a simultaneous decrease in the severity of burns. These trends were shown (by the Patient Safety Reporting System and phone calls to the risk management department) these trends were shown to have occurred in an environment where the operating suite team had increased its reporting of other types of near-misses. This increased reporting is believed to be largely due to an improved culture of safety.

The results of the spring 2003 SAQ also indicate that the overall work climate improved with respect to teamwork, safety, staff perceptions of management, and working conditions. The percentile ranking for the “teamwork climate” measure improved from 4% (at inception of the pilot project) to 32% (at the final SAQ administration). Job satisfaction remained the same overall but improved substantially among staff surgeons, particularly as shown by their responses to the questionnaire item “all of the necessary information is available before the start of procedure”: The percentage of surgeons agreeing with this statement increased from 46% to 88%.

Other indicators on the SAQ also reflected improved results. These indicators included an increase in the number of responses agreeing with the following statements:

- Nurse input is well received in the operating suite.
- Personnel speak up if they perceive a problem with patient care.
- I [survey respondent] know the first and last names of all the personnel that I worked with on my last shift.
- All operating suite personnel take responsibility for patient safety.
- Patient safety is constantly reinforced as the priority in the operating suite.
- Staffing levels are sufficient to care for the given number of patients.

Compared with earlier results of the SAQ, fewer respondents stated that they observed difficulty discussing mistakes and that a high workload was common in the operating suite.

Formal audit of preoperative briefing compliance conducted in October 2003 by the Surgical Operations Group (by examining documentation for each surgical procedure done during a randomly selected week) showed 66% average documented compliance. When measured in 2004, compliance with the preoperative briefing was above 80%. Although this recent result suggests opportunity for further improvement, this compliance rate reflects a substantial improvement over the rate of 24% reported by staff in the prepilot SAQ in 2001.

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In a development reflecting the pilot project's success, the KP Sunnyside Medical Center has implemented a policy stating that preoperative briefing will be conducted before each surgical intervention so that information is shared regarding the patient's care and so that the operating suite staff verify the operative procedure, identity of patient, correct site/side intended for surgery, and correct device to be implanted. Briefings may occur also during transfers ("handoffs") in responsibility or when new members join the team.

Discussion

Analyzing the Project's Success

One key to the project's success was that physicians and other staff who attended the KP Human Factors training session in June 2001 worked together to ensure that all operating suite staff at the KP Sunnyside Medical Center received an orientation to preoperative briefings. Concurrently with this process, the KP Sunnyside Medical Center Labor-Management Partnership Blame-Free Reporting Project was leveraged to promote an environment of trust and to raise the level of patient safety at the medical center by increasing the reporting of adverse events. Operating suite staff were assured that all reported burns would undergo a system analysis and that unless a burn resulted from a deliberate breach of rules, no punitive action would be taken. Next, a multidisciplinary team was formed to advance the briefings project. More than half of the project team consisted of labor representatives whose persistence and willingness to be partners in the project were fundamental to its success. The SAQ responses reflected meaningful improvement in the scores of all operating suite staff. By making briefing a routine procedure, labor and management alike have completed a transition from collaborating on a project to jointly creating safety.

Another aspect of this project's success is its scope and magnitude: The project affects each of the 10,000 to 12,000 patients seen at the KP Sunnyside Medical Center each year. On the basis of the project's success at this medical center, KPNW is expanding the preoperative briefings to the ambulatory surgery unit at the KP Skyline Medical Center, at which another 1200 to 1500 patients are seen each year.

On the basis of reports received from the operating suite, the KP Sunnyside Medical Center has succeeded in collecting information on close calls or near-misses that previously would have been ignored. This posi-

tive result translates into other areas of risk as well, because the briefing process represents a generic approach to furthering communication and sharing information related to potential risk.

The transformation of the safety culture in the operating suite at the KP Sunnyside Medical Center OR has been notable. Whereas the original focus was on reducing the number of burn-related injuries, preoperative briefing now transcends this subject. The entire department has increased its awareness that safety is not negotiable.

A key to the cultural shift that took place among the operating suite staff was their receipt of education regarding the importance of the problem. Having been shown photographs of burns that occurred in the operating suite, the surgical staff could recognize the severity of some of the injuries the pilot project was designed to prevent. Because most of the operating suite staff understood that patient safety requires teamwork, they actively worked on their communication skills.

The clear and demonstrated commitment of leadership as well as a persistent focus were two factors that were critical to the success of the project. A committee consisting of representatives from the risk management and quality assurance departments have monitored and have performed system analysis on each event and close call and have shared important lessons with the operating suite staff.

Next Steps for Preoperative Briefing

One of the next steps for KPNW is to take the briefing project into the ambulatory setting. Ambulatory representatives attended the Orange County Lawrence Patient Safety Award Transfer Symposium this past February to learn more about the success of the preoperative briefing project in Orange County and to combine the learnings from Orange County with our regional lessons.

Other next steps for the program include:

- Continued focus on teamwork using a protocol that includes the entire team;
- Training new staff;
- Maintaining and improving the culture; and
- Continued auditing to measure compliance.

Another future step for the program is to continue to modify the briefing tool in response to user suggestions. For example, some surgical team members have expressed their opinion that the briefing process requires too much paperwork. The committee is investigating ways to reduce paperwork while ensuring completion of necessary steps.

Another possibility is future expansion of the program to involve patients in the briefing process. Many patients have responded favorably to seeing the Briefing Checklist on the wall of the operating suite. The opportunity to include patients in the briefing process may provide the opportunity for the surgical staff to learn something not apparent in the medical chart.

These KPNW successes and those of the KP Orange County Preoperative Briefing Program build a strong case for programwide transfer of the preoperative briefing project, and the KPNW project team is willing to consider supporting other medical centers in their efforts to initiate their own preoperative briefing programs. ❖

References

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What Is Needed

One needs something to believe in,
something for which one can have wholehearted enthusiasm.

— *Hannah Senesh, 1921-44, Hungarian-Jewish soldier and diarist*