Along with technical and systems issues in the surgical setting, communication breakdown is another area that may lead to adverse outcomes. The book, “Surgical Patient Safety: A Case-Based Approach,” edited by Philip Stahel, MD and Director of Department of Orthopedics at Denver Health Medical Center, uses cases studies to draw awareness to the factors and situations that contribute to medical errors.

The following is an excerpt from that book that focuses on the issue of wrong site surgery.

**Case Description**

Dr. Hunk is a well-trained orthopedist who limits his practice to joint replacements. He has a great reputation, and performs 450–500 arthroplasties per year.

The patient is a 78-year-old woman with a history of multiple joint replacements for rheumatoid arthritis. Both artificial hips, implanted 23 (right) and 25 (left) years ago, need revision. After discussing his plan with the patient and her husband, Dr. Hunk sends them to his surgery scheduler with a surgical form that includes the following:

- Operation: bilateral revision, staged. R/L
- Time: 5 hours
On the day of surgery, Dr. Hunk confirms with the patient that he will be revising the older, left hip. She and her husband agree. As is his custom, Dr. Hunk uses an indelible marker to outline the posterior incision and sign his initials. As is his routine, he adds a smiley face at the end of the surgical site.

Following induction of anesthesia and lateral positioning of the patient, the operation proceeds smoothly. The prosthetic stem and cup are removed. Dr. Hunk begins preparing the femoral canal and asks for the revision broach. The operating room nurse hands him a broach for a right stem, and reports that all stems and trial components are for a right femur. Dr. Hunk calls the manufacturing representative, but per hospital policy, the representative is not allowed in the operating room. The following conversation transpired:

Dr. Hunk: “Do you have a left revision set?”

Rep: “I was told it was a right revision.”

Dr. Hunk: “Back to my question. Do you have a left revision set?”

Rep: “Yes. Unfortunately, it will take at least three hours to get it here.”

**Patient Outcome**

Dr. Hunk washed out the wound and closed the hip without prosthesis. Later that day he apologized to the patient, explained the error, and informed her of his plan to return her to the operating room to complete the operation within two to three days. Unfortunately, she developed postoperative atelectasis which delayed the second surgery. She then experienced a deep venous thrombosis that required six weeks of anti-coagulation therapy. Because of her inability to walk with a walker, she required a three-month nursing home stay. She and her husband sought the services of another orthopedist who told them that Dr. Hunk committed malpractice. The patient filed a lawsuit, and Dr. Hunk subsequently settled out of court based on pain, suffering, and the need for ongoing medical and nursing home care.

**Analysis**

A number of factors led to this event. To start, the scheduling form was ambiguous. The patient needed both hips revised, and the scheduler assumed that the right side would be performed first because it was written first. The scheduler never discussed the surgery with Dr. Hunk. Since she believed the right hip would be revised first, this is what was communicated to the manufacturing representative.

The manufacturer’s representative made templates from the x-rays. Since both hips were to be revised, the rep marked both the right and left side, sizing the prosthesis for each side accordingly.

Dr. Hunk never spoke directly to the representative, but placed the marked x-rays on the operating room view box. Hospital protocol did not allow the representative to be in the surgical suite, so he was not allowed to view the revision set of hip instruments as the operating room was opened. Finally, preoperatively, the surgical technician was counting and organizing the hundreds of pieces of equipment needed for a revision hip surgery. The scrub nurse never knew she had the wrong equipment until she was asked for the femoral broach.

Hindsight evaluation of any wrong side or wrong site surgery is relatively easy to understand. Yet despite major efforts, these errors continue. In 2004, the Joint Commission published the Universal Protocol designed to eliminate wrong patient/wrong site/wrong procedure surgery. The protocol consisted of three parts:

1. Patient verification of the procedure to be performed.
2. Surgical site marking.
3. A time-out before starting surgery.
Yet several authors have confirmed surgeries on the wrong patient, wrong site and wrong procedure continue to occur despite the protocol. It must be remembered that such sentinel events are rare, occurring an estimated 1 in 113,000 surgeries for wrong site events.

Unfortunately, the persistence of such events despite 11+ years of using the Universal Protocol attests to the difficulty of eradicating such errors. Systems analysis shows that these events involve more than just a surgeon operating on the wrong body part or without the proper equipment. The patient experience begins well before the physician-patient encounter. A phone call to the office may trigger a problem list, and language barriers are magnified by phone conversations where nonverbal cues are masked.

Receptionists and office aides often help complete forms that might create an anchoring bias for diagnosis and treatment. The patient’s journey through the hospital and operating room is guided by the surgeon who relies on his or her team to help throughout this journey. The team is large and involves receptionists, nursing assistants, surgical schedulers, physician assistants, perioperative personnel, manufacturers’ representatives, anesthesiologists, residents, radiologists, pathologists, and others.

Strategies for Improvement

Had the team taken a surgical time-out, the outcome may have been different.

The surgical time-out represents the last check before starting the procedure. The immediate members of the surgical team including surgeon, anesthesiologist, circulating nurse, and surgical technician must participate in a standardized, controlled process.

Time-out Essentials

- Correct patient, surgery, and site
- Perioperative antibiotic needs
- Allergies
- Availability of pertinent history, labs, images, and medications
- Necessary equipment needed to perform the operation

In 2009, the World Health Organization (WHO) used its experience to publish the WHO Surgical Safety Checklist and implement it in eight diverse institutions. Significant reductions in morbidity and mortality were noted. Despite such observations, utilization of the perioperative checklist remains inconsistent.

In a 2015 article, Walter Biffle, MD, explored the inconsistencies surrounding use of these protocols in an observational study of 854 cases involving ten Colorado hospitals that had mandated use of the WHO checklist. Dr. Biffle observed significant suboptimal compliance with the checklist, and he suggested that a lack of surgeon leadership about the issue was a major contributor to non-compliance.

Surgeons need to be aware of the areas of high risk this case study exemplifies. Special attention needs to be paid to communication in these areas:

- Surgical schedulers, whether in the office or operating room, are part of the perioperative team. Accurate communication between surgeon and scheduler is imperative.
- Complex operations involving equipment not routinely found in the hospital or surgery center require accurate communication between the supplier and the surgical team.
- Preoperative briefings should confirm the correct patient, site, operation, medicine, labs, and equipment needed for a successful surgery.

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