



**CRITICAL CONCEPT 8.2**

**Description of Wrong-Site Surgery Event**

A 62-year-old man was scheduled to undergo an arthroscopy procedure. Three weeks prior to the surgery, the orthopedic clinic telephoned the hospital to schedule the man's procedure. At that time, the front-office staff in the clinic mistakenly scheduled a left-knee arthroscopy instead of a right-knee arthroscopy. The surgery scheduling clerk at the hospital faxed a surgery confirmation form to the clinic. Per hospital policy, the clinic is expected to review the information on the form, verify the accuracy, and fax the signed confirmation back to the hospital. The clinic staff was busy and did not fax the confirmation back.

On the day of the surgery, the patient's paperwork indicated that the surgery was to be performed on his left knee, per the original phone call from the clinic. The surgery schedule, a document used to plan the day's activities in the operating area, also indicated that the patient was to have a left-knee arthroscopy. The man was taken to the preoperative holding area, where a nurse spoke with him about his upcoming procedure. Relying only on the surgery schedule, the nurse asked the patient to confirm that he was having an arthroscopy on his left knee. The man told the nurse that he had been experiencing pain in both knees and that he'd eventually need procedures on both of them. He thought he was scheduled for surgery on his right knee that day but that perhaps the doctor had decided to operate on his left knee instead. The nurse did not read the history and physical examination report that the patient's doctor brought to the hospital that morning. If she had read this report, she would have noticed that it indicated right knee surgery was scheduled that day.

The anesthesiologist examined the patient in the preoperative holding area. When asked about the procedure, the man was confused about which knee was to be operated on that day. The anesthesiologist wrote "knee arthroscopy" in his notes in the patient's record. The patient was taken into the operating room, where the surgeon was waiting. The surgeon spoke with the patient about the upcoming procedure on his right knee, and the patient signed a consent form indicating that surgery was to be performed on the right knee that day. The surgeon marked his initials on the man's right knee in ink to designate the surgery site.

*(Continued)*



**CRITICAL CONCEPT 8.2 (Continued)**

**Description of Wrong-Site Surgery Event**

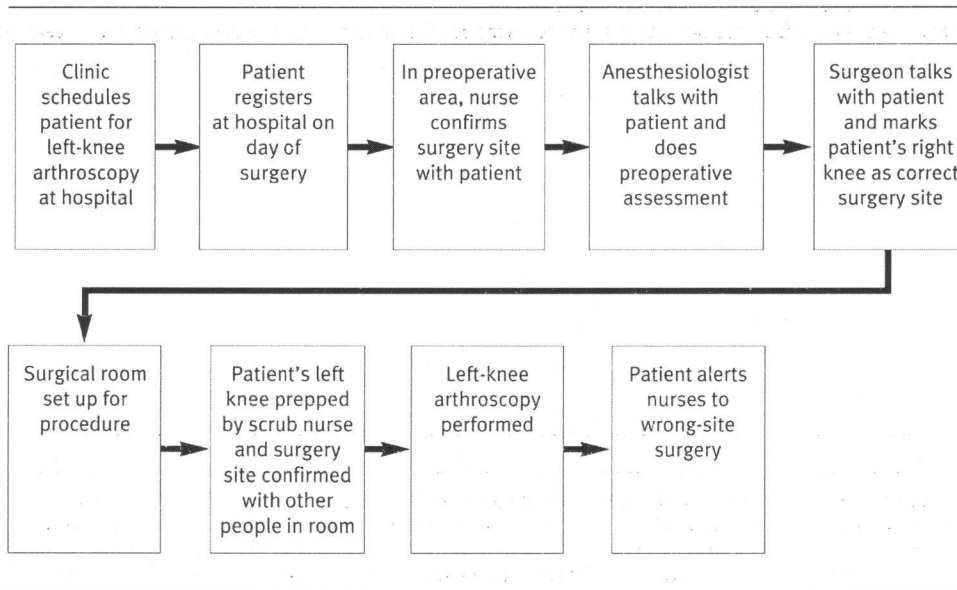
The anesthesiologist and scrub nurse readied the room for the procedure. The patient was anesthetized and fell asleep. Thinking the man was having surgery on his left knee, the nurse placed a drape over his right knee, not noticing the surgeon's initials. The left knee was placed in the stirrup and prepped for the procedure. The nurse then asked everyone in the room to confirm that the man was the correct patient and that he was having an arthroscopy on his left knee. Everyone in the room said "yes" except the surgeon, who was busy preparing for the procedure. Distracted, he nodded his head in agreement. The nurse documented on the preoperative checklist that the patient's identity, procedure, and surgery site had been verified.

The surgeon performed the arthroscopy on the knee that had been prepped—the left one. When the patient awoke in the surgical recovery area, he asked the nurse why he felt pain in his left knee and told her the procedure should have been performed on his right knee. The nurse notified the surgeon, who immediately informed the patient and his family about the mistake.

The RCA team for the wrong-site surgery event includes the people directly involved in the procedure—the surgeon, anesthesiologist, surgical nurses, and surgery scheduling clerk—and the managers of the admission and surgical areas. The team's first task is to determine what happened by collecting and inspecting physical evidence (e.g., equipment, materials, safety devices) and reviewing documentary evidence (paper or electronic media). The team also asks the people directly and indirectly involved in the event to provide their perspectives. These discussions may occur in a team meeting, or people may be interviewed individually. Ultimately, the team develops a picture of the event and creates a high-level flowchart to illustrate the steps leading up to it (Exhibit 8.12).

Next, the team looks for the root causes of the event. This step is more involved than the Five Whys tool described in Chapter 6. First, the RCA team determines the causal factors. Causal factors are situations, circumstances, or conditions that collectively, with other causes, increase the likelihood of the adverse event. The team identifies several such factors for the wrong-site surgery event:

- ◆ The orthopedic clinic phoned the patient's surgery reservation to the hospital. According to procedure, the clinic also should have confirmed the surgery



**EXHIBIT 8.12.**  
High-Level  
Flowchart of Event

reservation and provided a hard copy of it to the hospital, but it did not. Team discussion reveals that many surgeons' offices do not comply with this step.

- ◆ The surgeon failed to provide a copy of the patient's history and physical examination to the hospital at least 72 hours prior to surgery, as required by procedure. Without this document, the admissions and surgery scheduling clerk was unable to check the accuracy of the planned surgery prior to the patient's arrival.
- ◆ The nurse relied only on what was written on the surgical schedule to confirm the surgery site. The patient's history and physical report (which the surgeon brought to the hospital on the day of the surgery) indicated the patient was to undergo a right-knee arthroscopy, but the nurse did not read this report.
- ◆ The patient had a history of pain in both knees. The surgeon told him that eventually an arthroscopy would need to be performed on both knees. When the nurse and the anesthesiologist questioned the patient, he appeared confused about which knee was to be operated on that day.
- ◆ The surgeon correctly marked the patient's right knee as the surgery site. However, the scrub nurse placed drapes over the right knee and prepared the left knee for the procedure. The nurse had already set her mind to the fact that a left-knee arthroscopy was to be performed and did not notice the surgical-site marking on the patient's right knee.

- ◆ Prior to starting the arthroscopy, the scrub nurse asked everyone in the room to confirm the left knee as the surgery site. Everyone replied “yes” except the surgeon, who was busy at the time. He just nodded his head in agreement. According to procedure, everyone in the room is supposed to stop what he or she is doing and verbally confirm the correct site.
- ◆ The surgeon proceeded with the left-knee arthroscopy, not noticing that he was working on the wrong knee.

Once the team is satisfied that it has identified all causal factors, it identifies the root causes. Root causes are the most fundamental reasons the event occurred. To discover the root causes, the team asks “why” questions about each causal factor. For example, why didn’t the clinic provide a hard copy of the confirmed surgery reservation as required? Why didn’t the nurse confirm the intended procedure by reading through the patient’s history and physical report? Why didn’t anyone stop to reconfirm the correct surgery site when the patient exhibited confusion about the surgery he was having? Why didn’t the scrub nurse notice the surgical-site marking on the right knee before covering it up with a drape? This questioning process continues until the team identifies the system problems that underlie the causal factors. System problems take many forms (Vincent 2003):

- ◆ Organization and management (e.g., policies and standards, organizational culture, values and priorities)
- ◆ Work environment (e.g., staffing levels, workload, skill mix, resource availability, managerial support)
- ◆ Team (e.g., communication, team leadership, level of willingness to seek help)
- ◆ Individual staff members (e.g., knowledge and skills, motivation and attitude)
- ◆ Task (e.g., availability and use of standardized procedures)

Since January 1995, The Joint Commission has been gathering information on the root causes of sentinel events. Of the 1,243 sentinel events reported to The Joint Commission in 2011, the most common root causes were human factors (e.g., staffing levels, staffing skill mix, staff orientation and education, competency assessment, staff and resident supervision). Other leading root causes include inadequate communication between care providers or between care providers and patients/families, incorrect assessment of a patient’s physical or behavioral condition, and inadequate leadership (The Joint Commission 2012a).

The RCA team involved in investigating the event described in Critical Concept 8.2 determines the following system problems to be the root causes of the wrong-site surgery:

- ◆ During the surgery-site verification step, members of the surgical team did not actively communicate with each other.
- ◆ Management does not ensure that members of the surgical team consistently comply with the standardized surgery-site verification procedures.
- ◆ Surgeons' offices are not held accountable for not complying with the hospital's surgery scheduling procedures and history and physical exam report requirements.
- ◆ Perceived pressure for productivity (the need to start all procedures at the scheduled time) discourages members of the surgical team from interrupting the process when something unusual occurs (e.g., a patient expresses confusion about the surgery he is having).



#### LEARNING POINT

##### Root Cause Analysis

Root cause analysis is an accident investigation technique undertaken to find and fix the fundamental causes of an adverse event. It is similar to any improvement method that follows the steps of the Plan-Do-Study-Act cycle.

An adverse event usually has no more than four root causes. If the team identifies more than four, questioning should continue until the fundamental reasons are apparent.

Now that the root causes of the sentinel event have been identified, the team develops solutions to prevent such an event from occurring again. The Joint Commission uses the term **risk reduction strategies** to describe the actions required to reduce or eliminate root causes. The remaining steps of the RCA project are the same as those of any improvement project. The risk reduction strategies are implemented and tested to determine whether desired results have been achieved. If the strategies are successful, they are made permanent. Strategies that do not achieve the desired results are evaluated to determine why they did not work, and new strategies are developed and tested.

FMEA and RCA are not exclusively used for improving the safety of patient care processes. Just as the FMEA improvement model can be used to conduct a prospective risk assessment of any process, the RCA model can be used to investigate the cause of any process failure.

#### **Risk reduction strategies**

Actions undertaken to reduce or eliminate the root cause of an adverse event.

### 8.5 PATIENT ENGAGEMENT IN SAFETY

A patient safety observation by authors of the IOM (2000) report *To Err Is Human* involved the role of patients in preventing medication errors:

Patients themselves also could provide a major safety check in most hospitals, clinics, and practice. They should know which medications they are taking, their appearance, and their side effects, and they should notify their doctors of medication discrepancies and the occurrence of side effects.

In 2003, the National Quality Forum called for more research regarding the ways providers can facilitate the role of patients in reducing their chance of experiencing a medical error. Since that time, a growing body of research suggests patients and their family members can serve as additional safeguards in the healthcare system (Spath 2008b). Following are just some of the ways patients can make their hospital experience safer:

- ◆ Ask caregivers to perform, or observe them performing, patient identity checks before administration of treatments.
- ◆ Keep a list with you of prior medical history, current treatments, and allergies, and share this list with caregivers at admission.
- ◆ Know how often staff should change wound dressings, and when/how/whom to ask for a dressing change.
- ◆ Know the type, dosage, and frequency of administration for medications; ask caregivers to explain prescribed medications to verify that they are correct; if incorrect, question the caregiver's decision to administer the medication.
- ◆ Observe caregivers washing their hands, or ask them to do so.
- ◆ Monitor the cleanliness of the equipment and the environment, and report problems.
- ◆ Be informed about the usefulness of changing position in the hospital bed, and ask for position changes if they are not made as required.
- ◆ Request help when getting out of bed, or ask for an assistive device (e.g., cane walker).
- ◆ Confirm that caregivers know what treatment the doctor has ordered for your care.
- ◆ Ask about equipment to understand what different sounds or noises mean; alert caregivers if you think a problem might have arisen.

In 2002, The Joint Commission joined with AHRQ, the American Medical Association, and other national groups to promote involvement of consumers in patient safety efforts. As of this writing, The Joint Commission (2012b) requires accredited organizations to foster patients' active involvement in their care to improve safety. Caregivers are required to communicate with the patient and family about all aspects of care and encourage them to report concerns about safety. If a mistake occurs and a patient is harmed, regulations in some states and The Joint Commission standards require disclosure



of unanticipated outcomes of care to the patient or her representative (AHRQ Patient Safety Network 2012).

Some forward-thinking healthcare organizations are not only sharing information with patients and partnering with them for safety purposes but also including them in advisory groups to solicit safety improvement suggestions. At Dana-Farber Cancer Institute in Boston, patient and family representatives participate in a number of quality and patient safety–related committees (Joint Commission Resources 2006).

Likewise, the patient safety oversight committee at Passavant Area Hospital in Jacksonville, Illinois, includes three laypeople from the community. This committee reviews the hospital's patient safety measurement results and discusses solutions to safety problems (Spath 2008a). Dana-Farber and Passavant are two of many organizations embracing consumers as safety partners. Openly soliciting the consumer perspective on healthcare quality management, including safety improvement, is a relatively new phenomenon gaining popularity.



#### LEARNING POINT

Consumer Involvement in Patient Safety

Patients and family members can promote their safety by speaking up when they encounter a potentially unsafe or out-of-the-ordinary activity, process, or alarm. In some organizations, patients and family members are involved in internal quality management efforts.

## CONCLUSION

For many years, healthcare organizations have relied primarily on people performing their jobs correctly to protect patients from unintended harm. Decades of research, mostly from other industries, has proven that most accidents are caused by capable but fallible people working in dysfunctional systems. Healthcare organizations are now borrowing techniques from other industries to investigate the cause of mistakes and to design safer systems.

Patient safety is only one dimension of healthcare quality, yet it receives a lot of attention from regulators, purchasers, and accreditation groups. As consumerism in healthcare grows, patients are expecting to take a more active role in safety. Consumers' involvement in safety improvement is becoming a major contributor to healthcare organizations' quality management efforts.

Patient safety includes the basic quality management components: measurement, assessment, and improvement. Two improvement models—FMEA and RCA—are often used to reduce the chance that harmful mistakes will occur.