



The Wrong Site Surgery Project

Although reporting of wrong site surgery is not mandatory in most states, some estimates put the national incidence rate, which includes wrong patient, wrong procedure, wrong site and wrong side surgeries, as high as 40 per week.

This project was initiated in July 2009 by The Joint Commission Center for Transforming Healthcare and the Lifespan system in Rhode Island. The goal of the project was to improve the safeguards to prevent patients from wrong site, wrong side and wrong patient surgical procedures. In 2010, four additional hospitals and three ambulatory surgical centers joined the project. Like many health care organizations throughout the United States, these organizations recognize that, while wrong site surgery is a rare problem, all facilities and physicians who perform invasive procedures are at some degree of risk. The magnitude of this risk is often unknown or undefined. Providers who ignore this fact, or rely on the absence of such events in the past as a guarantee of future safety, do so at their own peril.

This project addresses the problem of wrong site surgery using Robust Process Improvement™ (RPI) methods. RPI is a fact-based, systematic, and data-driven problem-solving methodology. It incorporates tools and methods from Lean Six Sigma and change management methodologies. Using RPI, the project teams measure the magnitude of the problem (or, in the case of wrong site surgery, specific problems that increase the risk of this event), pinpoint the contributing causes, develop specific solutions that are targeted to each cause, and thoroughly test the solutions in real life situations. Although invasive surgical procedures occur in many settings, the scope of this project included all procedures performed in the operating room and all regional blocks performed by anesthesia either in the preoperative area or the operating room.

Results

Over the course of the project, the participating organizations were able to:

- Reduce the number of defective cases (defects are the causes of risks that could result in wrong site surgery) in surgical booking from a baseline of 39 percent to 21 percent; in pre-op from a baseline of 52 percent to 19 percent; and in the operating room from a baseline of 59 percent to 29 percent.
- Decrease the incidence of cases containing one or more defects by 57 percent in surgical booking; by 72 percent in pre-op/holding; and by 76 percent in the operating room.

Background

The Joint Commission has been at the forefront of the wrong site surgery issue for many years. Its Sentinel Event program first identified wrong site surgery as a common type of sentinel event. The Joint Commission has issued two *Sentinel Event Alert* newsletters on wrong site surgery; the first published in 1998 and the follow-up in 2001. In 2003, The Joint Commission held its first Wrong Site Surgery Summit and in 2004, it launched the Universal Protocol. The Joint Commission continues to press the urgency of this issue, so it was only natural that the Joint Commission Center for Transforming Healthcare would tackle this problem as one of its first initiatives.

Causes and solutions

Since wrong site surgeries are relatively rare events, they are difficult to study. Research has shown that there is usually no one root cause of failure. Instead, such events are frequently the result of a cascade of small errors that are able to penetrate organizational defenses. It is important to examine the failures in an organization's defenses to fully understand the event and reduce the risk of future failures. The organizations that participated in the Center's project focused on finding and reducing weaknesses in the perioperative process from scheduling to incision in an operative case. They identified 29 main causes of wrong site surgeries that occurred during scheduling, in pre-op/holding or in the operating room, or which

stemmed from the organizational culture. Those causes and some of the corresponding solutions are listed below. A [complete list of causes and solutions](#) is available on the Center for Transforming Healthcare website. The contributing factors identified by the participating organizations vary by organization and by event. This underscores the importance of understanding the specific contributing factors that increase risk in each organization so that appropriate solutions can be targeted to reduce the specific risks in that organization's processes. Targeted solutions for the Wrong Site Surgery Project will be available in the Center's Targeted Solutions Tool™ (TST) in the fall of 2011. *Note: Some solutions are applicable to numerous causes.*

Causes	Solutions
Scheduling	
Booking documents not verified by office schedulers	Confirm the accuracy of the operating room schedule
Schedulers accept verbal requests for surgical bookings instead of written documents	Limit entry points for primary documentation (consent, history and physical, physician orders, booking/scheduling form) to a single fax number
Unapproved abbreviations, cross-outs, and illegible handwriting used on booking form	Build on relationships with physician offices to improve the accuracy of information received and methods used to confirm the accuracy of the operating room schedule
Missing consent, history and physical, or surgeon's orders at time of booking	Confirm the presence and accuracy of primary documents critical to the verification process prior to the day of surgery (signed surgical consent, history and physical, and physician orders)
Pre-op holding/ holding	
Primary documents (consent, history and physical, surgeon's booking orders, operating room schedule) missing, inconsistent or incorrect	Share the data and allow the team to ask questions
Paperwork problems identified in pre-op but resolved in a different location	Create an environment in which staff are expected to speak up when they have a patient safety concern
Inconsistent use of site marking protocol	Examine processes for inconsistencies and seek to understand the cause of variation
Someone other than surgeon marks site	Mark in the pre-op/holding area performed by the surgeon using a single-use surgical skin marker with a consistent mark type (e.g., surgeon's initials) placed as close as anatomically possible to the incision site
Surgeon does not mark site in pre-op/holding	Mark the site for every procedure; if not possible, document why a site mark was not performed
Site mark made with non-approved surgical site marker	Do not move patient to the operating room before surgeon has marked the site
Stickers used in lieu of marking the skin	Provide rationale for changes important to implement even if a wrong site surgery event has not occurred
Inconsistent site marks used by physicians	Provide ongoing education and just-in-time coaching
Inconsistent or absent Time Out process for regional blocks	Verify all regional blocks using a standardized Time Out process
Rushing during patient verification	Describe the rationale to staff for why standardized processes are important
Alternate site marking process does not exist or is not used	Confirm identification of patient by all team members using patient armband, patient speak back, or patient caregiver if patient has been sedated
Inadequate patient verification by team	Examine processes for inconsistencies and seek to understand the cause of variation
Operating room	
Lack of intraoperative site verification when multiple procedures performed by the same provider	Perform a pause between each procedure that occurs within a single case to ensure that each procedure is performed accurately and according to the procedure, site and laterality contained within the signed surgical consent
Ineffective hand-off communication or briefing process	Perform a pre-operative briefing in the operating room with patient involvement, if possible, to verify patient identity, procedure site and side, along with other critical elements that need to be verified and addressed but are not part of the Time Out process.

Primary documentation not used to verify patient, procedure, site and side	Monitor compliance of standardized work processes, tools and methods in all steps of the process (scheduling/booking, pre-op/holding, operating room)
Site mark(s) removed during prep or covered by surgical draping	Examine processes for inconsistencies and seek to understand the cause of variation
Distractions and rushing during Time Out	<ul style="list-style-type: none"> • Work with operating room team to develop a role-based Time Out process that works for your organization • Perform a standardized Time Out process, which occurs after the prep and drape, and includes the following elements: <ul style="list-style-type: none"> ▶ Perform role-based Time Out in which every team member has an active role to play in the process ▶ Point and touch verification of the surgical site mark by the surgeon and scrub technician ▶ Address any concerns by the team before proceeding ▶ Reduce noise and cease all other activity in operating room
Time Out process occurs before all staff are ready or before prep and drape occurs	Empower all team members to participate in processes designed to reduce the risk of wrong site surgery; everyone is expected to speak up
Time Out performed without full participation	<ul style="list-style-type: none"> • Demonstrate leadership's commitment to implement standardized work processes for all steps – scheduling, pre-op/holding and operating room • Educate staff by using active learning techniques rather than communicating only through e-mails or posters
Time Outs do not occur when there are multiple procedures performed by multiple providers in a single operative case	Separate Time Out for procedures that have a change in surgeon
Organization culture	
Senior leadership is not actively engaged	Hold all caregivers and staff accountable for their role in risk reduction; organization should define roles
Inconsistent organizational focus on patient safety	Utilize an ongoing measurement system for identifying inconsistencies in real time
Staff is passive or not empowered to speak up	Share the data and allow the team to ask questions
Policy changes made with inadequate or inconsistent staff education	<ul style="list-style-type: none"> • Utilize a team approach when teaching all staff how the process should be executed • Celebrate success; everyone should be aware of improvement
Marketplace competition and pressure to increase surgical volume leads to shortcuts and variation in practice	Create an environment in which staff are expected to speak up when they have a patient safety concern

Project team

AnMed Health, South Carolina
Center for Health Ambulatory Surgery Center, Illinois
Holy Spirit Hospital, Pennsylvania
La Veta Surgical Center, California
Lifespan-Rhode Island Hospital, Rhode Island
The Mount Sinai Medical Center, New York
Seven Hills Surgery Center, Nevada
Thomas Jefferson University Hospitals, Pennsylvania

It is important to note that the work of the Center is conducted separately from the standards development and accreditation process, though it may ultimately drive changes to both. Some solutions that emanate from Center projects may go beyond current Joint Commission requirements. However, in no way should it be construed that the work of the Center contradicts or is in conflict with Joint Commission requirements. All Center solutions developed to date are fully consistent with applicable Joint Commission accreditation requirements. These solutions are intended to help health care organizations create more reliable processes and achieve high levels of consistent excellence.

For more information, visit www.centerfortransforminghealthcare.org.