Joint Commission Center for Transforming Healthcare

Reducing the Risk of Wrong Site Surgery

The Joint Commission’s Center for Transforming Healthcare aims to solve health care’s most critical safety and quality problems. The Center’s participants – leading health care organizations – use a proven, systematic approach to analyze specific breakdowns in patient care and discover their underlying causes to develop targeted solutions that solve these complex problems. In keeping with its objective to transform health care into a high reliability industry, The Joint Commission shares these proven effective solutions with the more than 20,000 health care organizations it accredits.

Wrong Site Surgery Project Participants

- AnMed Health
- Center for Health Ambulatory Surgery Center
- Holy Spirit Hospital
- La Veta Surgical Center
- Lifespan-Rhode Island Hospital
- The Mount Sinai Medical Center
- Seven Hills Surgery Center
- Thomas Jefferson University Hospitals

Update: May 13, 2013
Everyone agrees that wrong site surgery is a serious preventable adverse event. It should never happen. Although reporting 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. The estimate includes invasive procedures that occur in many settings within hospitals and ambulatory surgery centers, including but not limited to operating rooms. Some of the other hospital settings in which invasive procedures occur include the radiology and cardiology departments and patients’ bedsides. 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 Center for Transforming Healthcare would tackle this problem as one if its first initiatives.

The Center for Transforming Healthcare began collaborating with hospitals from Lifespan in Rhode Island in 2009; four additional hospitals and three ambulatory surgical centers joined the project in 2010. 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. Unless an organization has taken a systematic approach to studying its own processes, it is flying blind.

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, 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. Within the project scope, the timeframe begins at the time a procedure is scheduled for surgery and ends with incision.
**Wrong Site Surgery: Characteristics of Project Participants**

<table>
<thead>
<tr>
<th>Site</th>
<th>Location</th>
<th>Type</th>
<th># of Beds</th>
<th># of Surgeries Annually</th>
<th># of Operating Rooms</th>
</tr>
</thead>
<tbody>
<tr>
<td>AnMed Health</td>
<td>Anderson, South Carolina</td>
<td>Hospital</td>
<td>578</td>
<td>10,000</td>
<td>18</td>
</tr>
<tr>
<td>Center for Health Ambulatory Surgery Center</td>
<td>Peoria, Illinois</td>
<td>Ambulatory Surgical Center</td>
<td></td>
<td>7,400</td>
<td>6</td>
</tr>
<tr>
<td>Holy Spirit Hospital</td>
<td>Camp Hill, Pennsylvania</td>
<td>Hospital</td>
<td>319</td>
<td>10,000+</td>
<td>15</td>
</tr>
<tr>
<td>La Veta Surgical Center</td>
<td>Orange, California</td>
<td>Ambulatory Surgical Center</td>
<td></td>
<td>6,600</td>
<td>5</td>
</tr>
<tr>
<td>Lifespan - Rhode Island Hospital</td>
<td>Providence, Rhode Island</td>
<td>Hospital</td>
<td>719</td>
<td>24,399</td>
<td>33</td>
</tr>
<tr>
<td>The Mount Sinai Medical Center</td>
<td>New York, New York</td>
<td>Hospital</td>
<td>1,171</td>
<td>32,267</td>
<td>49</td>
</tr>
<tr>
<td>Seven Hills Surgery Center</td>
<td>Henderson, Nevada</td>
<td>Ambulatory Surgical Center</td>
<td></td>
<td>5,000</td>
<td>7</td>
</tr>
<tr>
<td>Thomas Jefferson University Hospitals</td>
<td>Philadelphia, Pennsylvania</td>
<td>Hospital</td>
<td>957</td>
<td>38,214</td>
<td>57</td>
</tr>
</tbody>
</table>

These health care organizations represent a variety of settings, from small to large, from rural to urban, both teaching and non-teaching. Their differences serve to underscore the importance of managing the risks of wrong site surgery. Whatever the size or scope of an organization, preventing wrong site surgery is accomplished through controlling the defects in the perioperative process from scheduling to incision.
Reducing Process Errors Reduces Risk of Wrong Site Surgery

To reduce the risk of wrong site surgery, all potential errors must be identified from scheduling to the operating room.

Wrong site surgeries are relatively rare events and, therefore, 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. In his 1997 book "Managing the Risks of Organizational Accidents," James Reason presents the Swiss Cheese Model of Defenses as a conceptual framework for studying and preventing unwanted outcomes. Organizations design multiple layers of defenses—represented by the slices of the Swiss cheese—to protect against accidents and sentinel events. Defenses are imperfect, and accidents happen when errors and weaknesses align. 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 Wrong Site Surgery project focused on finding and reducing weaknesses in the perioperative process from scheduling to incision in an operative case.
The surgical booking process can generate many errors. The challenge is that the physician offices that supply this information are often not affiliated directly with the organization. In fact, these offices have many different facilities to work with, which can lead to confusion. These errors, if left unaddressed, can lead to delays and rushing the day of surgery and increase the risk of wrong site surgery due, for example, to operating room set-up errors. Information on exactly how errors in the booking process arise can present a great opportunity for collaboration and quality improvement.

Defects identified in the surgical booking area are the result of miscommunication between the organization and physician offices, such as:
1. Written booking forms not being received, resulting in verbal bookings or last minute scheduling
2. Incorrect or incomplete bookings where laterality may or may not be addressed, inconsistencies between procedure codes and procedure descriptions, or incomplete identification of procedures
3. Legibility concerns and the use of abbreviations that are unapproved due to safety reasons (e.g. L instead of left)

When there is improvement in the proportion of defective cases at the time of surgical booking, the likelihood of those errors leading to a wrong site surgery goes down. These data highlight the importance of hospitals and ambulatory surgical centers collaborating directly with physician practices to reduce booking errors.
Defects occurring in the pre-op/holding areas have a great deal to do with documentation errors. These include:
1. Incomplete or incorrect documents such as history and physical, consent, and operating room schedule
2. Lack of verification of patient name and second identifier, procedure, procedure site, and laterality
3. Missing documents such as history and physical consent
4. Changes made to the consent in the pre-op area without operating room notification

Defects introduced at one stage of the peri-operative process increase the risk of wrong site surgery occurring in the operating room. These data demonstrate the effectiveness of interventions to reduce defects at the pre-operative stage.
Fortunately, wrong site surgery events do not occur often. This project therefore measures opportunities for errors (defects) that increase the risk of a wrong site surgery event. Examples include surgical site marking not being performed; staff inattention during the Time Out process; and the Time Out lacking critical information. These results depict the risk reduction that the organizations experienced from baseline findings through implementation of improvements in the operating room.

Defects identified in the operating room have more to do with site marking defects and team attention during the time out process:
1. Procedural site marking such as the use of unapproved site marking pen, mark not visible after prep and drape, every procedure is not marked, team members do not reference the site
2. Critical elements of the Time Out are not verbalized, such as patient name, second identifier, procedure, site and laterality
3. Staff is rushing during the Time Out and critical steps are missed

Defective cases reduced from a baseline of 59% to 29% (p-value = 0.000, N = 6)

A single operative case has multiple opportunities for defects. When there are multiple defects in a single case, it can increase the risk of an error reaching the patient. These data demonstrate the effectiveness of the interventions in substantially reducing the proportion of cases with multiple defects while increasing those with no defects.
## Main Causes of Wrong Site Surgeries

We are often asked about the relationship of the Center for Transforming Healthcare to The Joint Commission’s current accreditation requirements. The Center was established to examine and produce effective solutions for today’s most vexing safety and quality problems. Many of these are identified in Joint Commission accreditation requirements (such as National Patient Safety Goals) as problems health care organizations need to work on. The Center develops solutions that organizations can implement to reduce the harm of these quality problems. Very often, Joint Commission accreditation requirements specify a problem (e.g., maintaining hand hygiene compliance) that health care organizations should have an effective way to manage, and the Center provides effective ways to manage that problem.

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.

### Scheduling
- Booking documents not verified by office schedulers
- Schedulers accept verbal requests for surgical bookings instead of written documents
- Unapproved abbreviations, cross-outs, and illegible handwriting used on booking form
- Missing consent, history and physical, or surgeon’s orders at time of booking

### Pre-op/Holding
- Primary documents (consent, history and physical, surgeon’s booking orders, operating room schedule) missing, inconsistent or incorrect
- Paperwork problems identified in pre-op but resolved in a different location
- Inconsistent use of site marking protocol
- Someone other than surgeon marks site
- Surgeon does not mark site in pre-op/holding
- Site mark made with non-approved surgical site marker
- Stickers used in lieu of marking the skin
- Inconsistent site marks used by physicians
- Inconsistent or absent Time Out process for regional blocks
- Rushing during patient verification
- Alternate site marking process does not exist or is not used
- Inadequate patient verification by team

### Operating Room
- Lack of intraoperative site verification when multiple procedures performed by the same provider
- Ineffective hand-off communication or briefing process
- Primary documentation not used to verify patient, procedure, site and side
- Site mark(s) removed during prep or covered by surgical draping
- Distractions and rushing during Time Out
- Time Out process occurs before all staff are ready or before prep and drape occurs
- Time Out performed without full participation
- Time Outs do not occur when there are multiple procedures performed by multiple providers in a single operative case

### Organizational Culture
- Senior leadership is not actively engaged
- Inconsistent organizational focus on patient safety
- Staff is passive or not empowered to speak up
- Policy changes made with inadequate or inconsistent staff education
- Marketplace competition and pressure to increase surgical volume leads to shortcuts and variation in practice

These contributing factors vary by organization and by event. This underscores the importance of understanding specific root causes so that appropriate solutions can be targeted.
### Validated Root Causes for Risk of Wrong Site Surgery

<table>
<thead>
<tr>
<th>Root Cause</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
<th>G</th>
<th>H</th>
</tr>
</thead>
<tbody>
<tr>
<td>Booking documents not verified by office schedulers</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Schedulers accept verbal requests for surgical bookings instead of written documents</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Unapproved abbreviations, cross-outs, and illegible handwriting used on booking form</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Missing consent, history and physical, or surgeon’s orders at time of booking</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Primary documents (consent, history and physical, surgeon’s booking orders, operating room schedule) missing, inconsistent or incorrect</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Paperwork problems identified in pre-op but resolved in a different location</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Inconsistent use of site marking protocol</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Someone other than surgeon marks site</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Surgeon does not mark site in pre-op/holding</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Site mark made with non-approved surgical site marker</td>
<td></td>
<td></td>
<td></td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stickers used in lieu of marking the skin</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Inconsistent site marks used by physicians</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Inconsistent or absent Time Out process for regional blocks</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Rushing during patient verification</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Alternate site marking process does not exist or is not used</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Inadequate patient verification by team</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
</tbody>
</table>

Note that not all of the main causes of failure appear in every hospital or ambulatory surgical center. The chart above represents the validation of the root causes across the pilot sites. This underscores the importance of understanding specific root causes so that appropriate solutions can be targeted.

Update: May 13, 2013
# Validated Root Causes for Risk of Wrong Site Surgery

## Operating Room

<table>
<thead>
<tr>
<th>Cause</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
<th>G</th>
<th>H</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lack of intraoperative site verification when multiple procedures performed by the same provider</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>Ineffective hand-off communication or briefing process</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td></td>
<td></td>
<td>x</td>
</tr>
<tr>
<td>Primary documentation not used to verify patient, procedure, site and side</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td></td>
<td></td>
<td>x</td>
<td>x</td>
<td></td>
</tr>
<tr>
<td>Site mark(s) removed during prep or covered by surgical draping</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td></td>
<td></td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>Distractions and rushing during Time Out</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>Time Out process occurs before all staff are ready or before prep and drape occurs</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>Time Out performed without full participation</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>Time Outs do not occur when there are multiple procedures performed by multiple providers in a single operative case</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>x</td>
</tr>
</tbody>
</table>

## Organizational Culture

<table>
<thead>
<tr>
<th>Cause</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
<th>G</th>
<th>H</th>
</tr>
</thead>
<tbody>
<tr>
<td>Senior leadership is not actively engaged</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Inconsistent organizational focus on patient safety</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td></td>
<td></td>
<td>x</td>
</tr>
<tr>
<td>Staff is passive or not empowered to speak up</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>Policy changes made with inadequate or inconsistent staff education</td>
<td></td>
<td></td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>Marketplace competition and pressure to increase surgical volume leads to shortcuts and variation in practice</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
</tr>
</tbody>
</table>

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Solutions for Reducing the Risk of Wrong Site Surgery

Reinforce Quality and Measurement

- Demonstrate leadership’s commitment to implement standardized work processes for all steps—scheduling, pre-op/holding and operating room
- Utilize an ongoing measurement system for identifying inconsistencies in real time
- Hold all caregivers and staff accountable for their role in risk reduction; organization should define roles
- Monitor compliance of standardized work processes, tools and methods in all steps of the process (scheduling/booking, pre-op/holding, operating room)
- Make it easy
  > 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
  > Limit entry points for primary documentation (consent, history and physical, physician orders, booking/scheduling form) to a single fax number
  > Work with operating room team to develop a role-based Time Out process that works for your organization

Knowledge

- Examine processes for inconsistencies and seek to understand the cause of variation
- Educate staff by using active learning techniques rather than communicating only through e-mails or posters
- Provide rationale for changes important to implement even if a wrong site surgery event has not occurred
- Describe the rationale to staff and explain why standardized processes are important
- Share the data and allow the team to ask questions
- Empower all team members to participate in processes designed to reduce the risk of wrong site surgery; everyone should be expected to speak up

Safety Culture

- Create an environment in which staff are expected to speak up when they have a patient safety concern

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Solutions for Reducing the Risk of Wrong Site Surgery

- Standardize processes to:
  > Confirm the accuracy of the operating room schedule
  > 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)
  > Confirm identification of patient by all team members using patient armband, patient speak back, or patient caregiver if patient has been sedated
  > 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
- Do not move patient to the operating room before surgeon has marked the site
  > Mark the site for every procedure; if not possible, document why a site mark was not performed
  > Verify all regional blocks using a standardized Time Out 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.

These include:
  > Verify correct implant availability
  > Verify blood product availability
  > Verify presence of operative films, including the correct orientation
  > Identify any special considerations (i.e., allergies, antibiotics)
- Perform a standardized Time Out process, which occurs after the prep and drape, and includes the following elements:
  > 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
- 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
- Separate Time Out for procedures that have a change in surgeon
Identifying Causes, Targeting Solutions

**Causes**

- Booking documents not verified by office schedulers
- Schedulers accept verbal requests for surgical bookings instead of written documents
- Unapproved abbreviations, cross-outs, and illegible handwriting used on booking form
- Missing consent, history and physical, or surgeon's orders at time of booking

**Solutions**

- Confirm the accuracy of the operating room schedule
- 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
- Confirm the accuracy of the operating room schedule
- Limit entry points for primary documentation (consent, history and physical, physician orders, booking/scheduling form) to a single fax number
- Monitor compliance of standardized work processes, tools and methods in all steps of the process (scheduling/book- ing, pre-op/holding, operating room)
- 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
- 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)
- 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
- Limit entry points for primary documentation (consent, history and physical, physician orders, booking/scheduling form) to a single fax number
Identifying Causes, Targeting Solutions

Causes

- Primary documents (consent, history and physical, surgeon’s booking orders, operating room schedule) missing, inconsistent or incorrect
- Paperwork problems identified in pre-op but resolved in a different location
- Inconsistent use of site marking protocol

Solutions

- 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)
- Limit entry points for primary documentation (consent, history and physical, physician orders, booking/scheduling form) to a single fax number
- 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
- Share the data and allow the team to ask questions
- Create an environment in which staff are expected to speak up when they have a patient safety concern
- Create an environment in which staff are expected to speak up when they have a patient safety concern
- Mark the site for every procedure; if not, document why a site mark was not performed
- Do not move patient to the operating room before surgeon has marked the 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
- Examine processes for inconsistencies and seek to understand the cause of variation
Identifying Causes, Targeting Solutions

Causes

- Someone other than surgeon marks site
- Surgeon does not mark site in pre-op/holding

Solutions

- Mark the site for every procedure; if not possible, document why a site mark was not performed
- Do not move patient to the operating room before surgeon has marked the 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
- Examine processes for inconsistencies and seek to understand the cause of variation
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- Create an environment in which staff are expected to speak up when they have a patient safety concern
Identifying Causes, Targeting Solutions

**Causes**

- Site mark made with non-approved surgical site marker
- Stickers used in lieu of marking the skin
- Inconsistent site marks used by physicians

**Solutions**

- Do not move patient to the operating room before surgeon has marked the 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
- 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
- Provide rationale for changes important to implement even if a wrong site surgery event has not occurred
- Do not move patient to the operating room before surgeon has marked the 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
- Provide ongoing education and just-in-time coaching
Identifying Causes, Targeting Solutions

Causes

- Inconsistent or absent Time Out process for regional blocks
- Rushing during patient verification
- Alternate site marking process does not exist or is not used
- Inadequate patient verification by team

Solutions

- Verify all regional blocks using a standardized Time Out process
- Describe the rationale to staff for why standardized processes are important
- Monitor compliance of standardized work processes, tools and methods in all steps of the process (scheduling/book- ing, pre-op/holding, operating room)
- Hold all caregivers and staff accountable for their role in risk reduction; organization should define roles
- Create an environment in which staff are expected to speak up when they have a patient safety concern
- Mark the site for every procedure; if not possible, document why a site mark was not performed
- Describe the rationale to staff for why standardized processes are important
- Do not move patient to the operating room before surgeon has marked the site
- Confirm identification of patient by all team members using patient armband, patient speak back, or patient caregiver if patient has been sedated
- Examine processes for inconsistencies and seek to understand the cause of variation
Identifying Causes, Targeting Solutions

**Causes**
- Lack of intraoperative site verification when multiple procedures performed by the same provider
- Ineffective hand-off communication or briefing process
- Primary documentation not used to verify patient, procedure, site and side

**Solutions**
- 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.
- 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.
- Examine processes for inconsistencies and seek to understand the cause of variation.
- 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.
- Confirm identification of patient by all team members using patient armband, patient speak back, or patient caregiver if patient has been sedated.
- Monitor compliance of standardized work processes, tools and methods in all steps of the process (scheduling/booking, pre-op/holding, operating room).
Identifying Causes, Targeting Solutions

**Causes**
- Site mark(s) removed during prep or covered by surgical draping
- Distractions and rushing during Time Out

**Solutions**
- Examine processes for inconsistencies and seek to understand the cause of variation
- Provide rationale for changes important to implement even if a wrong site surgery event has not occurred
- Perform a standardized Time Out process, which occurs after the prep and drape, and includes the following elements:
  - 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
- Work with operating room team to develop a role-based Time Out process that works for your organization
Identifying Causes, Targeting Solutions

Causes

Time Out process occurs before all staff are ready or before prep and drape occurs

Solutions

- Perform a standardized Time Out process, which occurs after the prep and drape, and includes the following elements:
  - 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
- 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.
- Work with operating room team to develop a role-based Time Out process that works for your organization
- Empower all team members to participate in processes designed to reduce the risk of wrong site surgery; everyone is expected to speak up
Identifying Causes, Targeting Solutions

**Causes**
- Time Out performed without full participation

**Solutions**
- Perform a standardized Time Out process, which occurs after the prep and drape, and includes the following elements:
  - 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
- Educate staff by using active learning techniques rather than communicating only through e-mails or posters
- Demonstrate leadership’s commitment to implement standardized work processes for all steps—scheduling, pre-op/holding and operating room
- Monitor compliance of standardized work processes, tools and methods in all steps of the process (scheduling/book- ing, pre-op/holding, operating room)
- Provide rationale for changes important to implement even if wrong site surgery event has not occurred
- Work with operating room team to develop a role-based Time Out process that works for your organization
- Create an environment in which staff are expected to speak up when they have a patient safety concern
- Describe the rationale to staff for why standardized processes are important
- Utilize a team approach when teaching all staff how the process should be executed
- Provide ongoing education and just-in-time coaching
Identifying Causes, Targeting Solutions

Causes
- Time Outs do not occur when there are multiple procedures performed by multiple providers in a single operative case
- Senior leadership is not actively engaged

Solutions
- Examine processes for inconsistencies and seek to understand the cause of variation
- Provide rationale for changes important to implement even if a wrong site surgery event has not occurred
- Perform a standardized Time Out process, which occurs after the prep and drape, and includes the following elements:
  > 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
- Separate Time Out for procedures that have a change in surgeon
- Demonstrate leadership’s commitment to implement standardized work processes for all steps—scheduling, pre-op/holding and operating room
- Hold all caregivers and staff accountable for their role in risk reduction; organization should define roles
Identifying Causes, Targeting Solutions

**Causes**

- Inconsistent organizational focus on patient safety
- Staff is passive or not empowered to speak up
- Policy changes made with inadequate or inconsistent staff education
- Marketplace competition and pressure to increase surgical volume leads to shortcuts and variation in practice

**Solutions**

- Utilize an ongoing measurement system for identifying inconsistencies in real time
- Hold all caregivers and staff accountable for their role in risk reduction; organization should define roles
- Empower all team members to participate in processes designed to reduce the risk of wrong site surgery; everyone should be expected to speak up
- Share the data and allow the team to ask questions
- Work with operating room team to develop a role-based Time Out process that works for your organization
- Create an environment in which staff are expected to speak up when they have a patient safety concern
- Work with operating room team to develop a role-based Time Out process that works for your organization
- Utilize a team approach when teaching all staff how the process should be executed
- Provide ongoing education and just-in-time coaching
- Celebrate success; everyone should be aware of improvements
- Create an environment in which staff are expected to speak up when they have a patient safety concern
- Examine processes for inconsistencies and seek to understand the cause of variation

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Joint Commission Center for Transforming Healthcare

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