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**Title:** Strategies to Reduce Wrong Site-Side Surgery/Procedure: Working toward Zero Harm

**Areas of Focus:** Patient Safety and Quality Improvement

### **Brief Statement**

As the Vice President of Clinical Excellence, I support and commend innovative strategies that cultivate a commitment to our organization's strategic goal of Perfect Care. Wrong site/side surgeries (WSS) are rare events and should never happen. Our organization employs strategies to discover and test effective solutions to solve an industry wide focus to reduce preventable patient harm. Our solutions have proven to improve patient safety (refer to Figure 1).

St. Jude Medical Center (SJMC) endorses a culture of safety that acknowledges the high-risk of WSS, investigates how to achieve safe operations, enculturates a transparent environment, encourages interprofessional collaboration in finding best safety practices and commits resources to address safety concerns. Several structures and processes exist at SJMC to support nurses' facility-wide involvement in proactive error management in the prevention of WSS project. Educational safety programs, such as Crew Resource Management (CRM) training, interprofessional annual simulation training, formal risk assessments, Good Catch program, root cause analysis, and Interprofessional Shared Governance, are structures and processes that equip nurses in risk assessment and proactive error management.

In addition to the educational safety programs, an organizational commitment to Perfect Care led to the approval of an Institutional Review Board (IRB) research project entitled, "Utilizing CRM Principles in Simulation to Decrease Harm Events in Surgery" in February 2013. This research project by a surgical service frontline nurse along with several key stakeholders, such as the entire surgical staff, physician champions (anesthesia and surgeons) and administrative leadership, validated a unique opportunity to use simulation training to develop staff advocacy behaviors in the Operating Room (OR) applying CRM skills. The research results

supported simulation is an effective training method and verified a correlation between CRM training via simulation and the surgical team effectiveness and assertiveness to speak up to avoid harm. The study revealed reduction in harm events overtime, thus indicating that training and an increased focus on speaking up resulted in increased patient safety in the OR. As SJMC embarked on a zero harm event journey, CRM essential skills have been incorporated in all staff annual simulation training.

In November 2013, a multidisciplinary frontline staff formed a performance improvement team with surgery schedulers from the physician offices to work toward zero WSS events. This team positioned themselves to develop an accurate surgery scheduling process, and pre-verification and reconciliation of patient essential information. This global collaboration and engagement among the clinicians has led SJMC toward zero WSS since the implementation of the project.

## **Executive Summary**

Since achieving correct surgical site/side encompasses a series of processes involving various care team members in multiple locations, SJMC implemented reliable standardized processes to secure accurate clinical information including a re-designed accurate surgery scheduling process, incorporating active patient participation during the pre-operative verification process, proactive measures ensuring accurate site/side marking, and a surgery team briefing and prescriptive “time out” process conducted immediately before starting any procedure.

To further safeguard and prevent WSS, SJMC implemented accurate surgery scheduling steps with continuous verification and reconciliation of pertinent patient information prior to patient’s arrival for a scheduled surgical procedure. Outpatient Testing Center (OPTC) nurses are strategically positioned to interface with patients before they enter the hospital campus for a surgery/procedure and equipped to integrate technology across electronic platforms such as physician documentation systems (Touchworks) and (ePREOP), hospital surgery scheduling module (PICIS), and Meditech, to drive accurate pre-verification and reconciliation of essential patient information confirming the accuracy of physician orders, history and physical, consents, and radiology reports. This systematic approach to eliminating WSS improved the culture of safety promoting open communication/speaking up. Preventable WSS events, achieving zero WSS post implementation in November 2013 - demonstrating “chasing zero patient harm”.

## **Background and Relevance**

Why is focusing on preventable WSS important to SJMC? Improving quality of care and patient safety are always a top priority. WSS was a moving force, as in the past, SJMC had experienced several WSS events with negative consequences. In response to the occurrence of these preventable harm events, senior leadership, physicians and staff are committed to achieve zero preventable harm events and realize this lasting improvement in preventable harm events would depend on orchestrating change in culture. Specifically, team communication and speaking up must become enculturated into everyday clinical practice. This goal remains a top priority for SJMC.

Scheduling errors can easily propagate in subsequent stages that lead to WSS events. With senior leadership’s commitment to a culture of patient safety, accurate surgery scheduling process and pre-verification and reconciliation of patient essential information, a performance improvement project was initiated by OPTC frontline staff in collaboration with physician office schedulers. This project aims to measure opportunities for scheduling errors that increase the risk of WSS events. The day before surgery, OPTC nurses verify and reconcile the pertinent information such as the physician order form, history and physical reports, and surgery consent

order with the patient via telephone. This active verification process allows the nurse to probe and elicit responses from the patient to confirm the accuracy of the information.

### **Innovation Activities/Initiatives and Integration**

The goal of this project is to affirm the current accurate surgery patient scheduling and validate the pre-procedural verification process is effective identification of potential wrong site/site errors. The project scrutinized variables such as physician order forms, history and physical reports, surgical scheduling and staff interventions. The approach to this innovative project was applying a multiphase methodological system. In the first phase, the team carefully evaluated the scheduling processes between the physician offices and hospital surgery schedulers. In addition to the scheduling processes, interviews with the OPTC staff were held individually and as a group to brainstorm and better understand their existing pre-verification and reconciliation of patient essential information process. Shortly after, a baseline gap analysis was completed.

In the second phase, the initial self-reported data results were analyzed. After review of the data, it was noted that the majority of issues were related to laterality documentation with discrepancy of correct site or side when comparing the physician order forms to the history and physical reports, surgery consent orders, surgery schedules, and/or radiology reports.

From November 2013 to March 2014, OPTC staff identified 59 laterality discrepancies during the verification and reconciliation of pertinent information from the physician order forms, history and physical reports, and surgery consent orders. Of the total, 93% (54/59 reported) were specifically related to laterality discrepancy of documentation of correct side or site identified by the nurse when comparing the physician surgery order to the history and physical report, consent and/or radiology reports. This active verification and reconciliation process allows the nurse to verify pertinent details across electronic platforms of medical information then proceed to make contact with the patient to elicit responses from the patients to confirm the accuracy of the side/site of the planned surgery. Errors were proactively identified by OPTC staff and incident reports have been completed. As a part of the "Good Catch" program, staff was recognized with an acknowledgement of reporting the errors. This project was initiated and driven by the frontline staff and four months of data supported the need to dive deeper into the "whys", validating the need for culture change.

OPTC staff desired to make accuracy of scheduling and the pre-verification and reconciliation of essential information discrepancy their priority. SJMC endorses the Interprofessional Shared Governance model that enables frontline staff to influence decisions that affect their practice and provides a framework that aligns staff with the organization's overall goals and empowering all staff to play an active role achieving the organization's Perfect Care goals. The project was presented to the Interprofessional Shared Governance's Nurse

Practice Council, to assert this project as its departmental performance improvement project. The request was reviewed and approved by the Nurse Practice Council; the Interprofessional Shared Governance charter requires a formal bi-annual reporting on the project status and findings.

A multidisciplinary team began to form and work toward improving the accuracy of scheduling and reducing the number of WSS events. The team continues to meet monthly to review the collected data, includes a representative of the physician orthopedic surgery scheduler group, OPTC “champion” nurse, hospital surgery scheduler, endoscopy manager, operating room manager and director, along with the clinical excellence staff members. The orthopedic surgery scheduler team member shares the data and findings with the other five surgery scheduler associates, all of the division leaders, and the surgeons. Although their practices for scheduling surgery with the hospital were similar, the process varied among all the surgery schedulers within their division. Surgeons were using three different surgical consent forms; some surgeons sent the scheduler an electronic order for surgery and some hand wrote orders for surgery on physician order forms - this lacked standardization and there was no validation of laterality with the patient.

Workflow was then redesigned among the orthopedic physician surgery schedulers in development of a new standardized surgical safe checklist, including check boxes for laterality (right versus left), use of one rather than three different surgical consent forms, and established a new process of validating laterality directly with the patient by both the medical assistants and the surgery schedulers. Shortly after, the hospital surgery schedulers identified the interface between Touchworks and ePREOP that resulted in a work product in which PICIS flow causes confusion and multiple errors by the hospital surgery schedulers.

Touchworks is the electronic system utilized as the electronic medical record by the physician offices. When a surgery is scheduled, the surgery scheduler initiates ePREOP, while some fields require manual population of data, the majority fields are automatically populated. The ePREOP orders are sent to the hospital surgery schedulers for scheduling and anesthesia review prior to the day of surgery. The hospital surgery schedulers then integrate the ePREOP information with the PICIS system. As the data order in ePREOP followed the Touchwork template, it presented the data to the hospital schedulers out of the order as required by PICIS. As a result, the hospital surgery schedulers were required to scroll through multiple electronic pages searching for information required to complete the hospital schedule module. The searching for information resulted in distractions and errors by the hospital surgery schedulers.

The perioperative services application team representative was invited to evaluate the PICIS system. It was determined that the PICIS module could not be altered; however, the documentation template for Touchworks, which flows into ePREOP could be modified.

Perioperative services team members were able to realign several data elements to a position in which the automated flow of data from Touchworks to ePREOP resulted in an improved flow to PICIS. Additionally, the ePREOP documentation was consolidated from five to two pages. As a result, the hospital surgery schedulers find important data elements easier in ePREOP, and do not need to endlessly scroll to look for essential scheduling information. The modification of the electronic scheduling system enhanced the automated workflow for the hospital surgery schedulers, reducing the risk of potential errors.

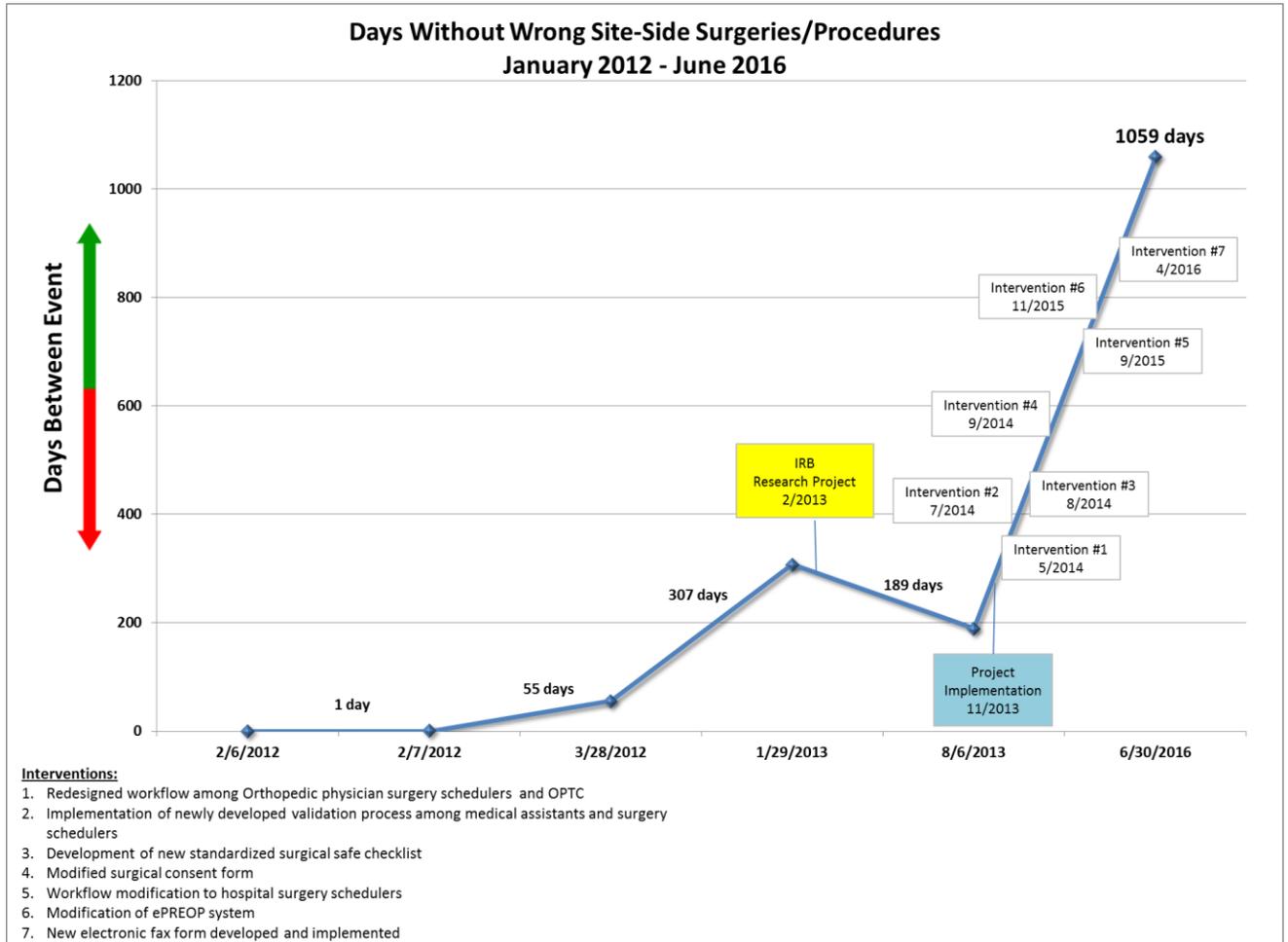
Review of hospital surgery schedulers' workflow revealed a complex mix of automation and manual management systems. Their process was mapped and findings included, holding surgical time slots until the end of business day, receipt of electronic and manually faxed order sets, the filing of pending orders electronically, and in a separate paper alpha file, multiple amendments to initial orders and varying processes utilized by surgery schedulers from all physician offices when scheduling surgery at SJMC. When the physician office amended an order in response to the OPTC pre-verification of essential data and identification of discrepancy, the amended order could only be added to the bottom page of ePREOP. This required the hospital surgery schedulers to search the electronic data to locate and find the changes at the end of the document. The offices frequently sent multiple modifications, resulting in mix-up and confusion as to the most current amendment.

In response to these findings, several workflow modifications were implemented by the process owners to reduce variations and interventions proved successful. One additional full-time staff member for hospital surgery scheduling was approved and filled to assist with the increased volume of surgery scheduling. The OPTC staff implemented a new electronic fax form cover sheet to attach to amendments which are forwarded to the hospital surgery schedulers. The cover sheet not only cited the specific changes in the amended surgeon's order, but the identification of the sequence of the amendment, for example, first amendment, second amendment, and so on. This process change facilitated the hospital scheduler in validating the scheduled surgery with the most recent and accurate amendment. To reduce error between manually and faxed orders from the hospital, the hospital surgery schedulers transformed their process to allow only electronic faxed orders and amendments from the physician offices.

## **Results and Significance**

As a result of the November 2013 implementation of the redesigned scheduling process, and the standardized approach to pre-verification and reconciliation of essential patient information, SJMC has experienced zero WSS for 1059 consecutive days.

**Figure 1: WSS Trend: This graph demonstrates the effective of a series of strategies to achieve zero WSS since August 2013.**



Measuring and tracking performance is an important step in improving sustainability in order to continually refine old practices and to move toward evidence-based practice. Quarterly reports (trending by error type and physician) are presented to the OPTC department staff at their morning huddle, Surgical Services director, and Surgery Medical Staff Services meeting. Biannual reports are presented to the Interprofessional Shared Governance Nurse Quality Council to maintain awareness and celebrate success.

**Sustainability and Key Lessons Learned**

From the start of this performance improvement project, staff, physicians, and senior leaderships recognized the need to promptly address the wrong-site/site surgery events. Frontline staff understood that the organizational goal in achieving zero preventable harm. A number of strategies have been implemented, including the “lessons learned” program,

ongoing education to leaders and staff on error prevention, annual simulation training, and Crew Resource Management training, along with integration of Just Culture principles.

The success in this project was transforming culture change, system design and a safety checklist in surgery scheduling. The importance behind the need for culture change was communicated to all affected frontline staff, allowing them to voice their concerns and contribute their thoughts, views and opinions. Furthermore, the change implemented in phases to facilitate “buy in” and carefully monitor the change process to measure the impact and evaluate its success. Keeping staff informed on the progress of the project regularly is the key to the overall success.

SJMC learned that to sustain any performance improvement project, there is a need for:

- Peer champions
  - A key role in the success of implementation of practice change.
  - Continuously engaging stakeholders throughout the planning, implementation and adaption processes
- Ongoing measurement and feedback
  - Ongoing measurement and feedback allow continuous refinement of the intervention as needed and to avoid drift.
- Rewards for reporting good catches
  - Reporter receives a “Good Catch” certificate and two movie tickets as a token of appreciation for demonstrate commitment to keeping patients safety by speaking up to prevent potential harm to a patient.
- Celebrate successes
  - Use performance reports and celebrate interim achievements.

### **Scalability**

With overwhelming success and sustainment in the surgical services arena, this process of preventing wrong-site/side surgery has expanded to all invasive procedural areas in the hospital. The Imaging service line adopted and replicated the interventions in November, 2015 which also sustained a zero harm events for 239 consecutive days. The Cath Lab service line is now adopting a similar intervention. This innovative project, designed in collaboration with surgery schedulers from physician offices, OPTC frontline staff, senior leadership, and management, has transformed the safety culture at SJMC.