

## TJUH Collaboration with The Joint Commission for Prevention of Wrong Site Surgery

Wrong site surgery (WSS) is such an egregious mistake that it has been labeled by one National Quality Forum (NQF) health safety expert as a “never event.”<sup>1</sup> Never events are defined as occurrences that are “of concern to both the public and healthcare professionals and providers; clearly identifiable and measurable (and thus feasible to include in a reporting system); and of a nature such that the risk of occurrence is significantly influenced by the policies and procedures of the healthcare organization.”<sup>2</sup> The effects can be devastating for both the patient and the surgical team.<sup>3</sup> WSSs are widely considered to be preventable medical errors, easily derailed by a series of very basic verification steps.<sup>1,3,4</sup> Yet, according to estimates, the prevalence may be as high as 40 WSS events *per week* across the nation.<sup>5</sup>

When compared to the total number of U.S. operative cases performed annually, WSSs are still very rare.<sup>1</sup> However, in recent years the incidence of WSS reported to The Joint Commission has increased from 15 cases in 1998 to a total of 956 cases by late 2010 and, because reporting is voluntary, there is strong speculation that the official number of actual cases may be grossly underreported.<sup>3,6</sup> Regardless of the cause of the trend WSSs remain a devastating and potentially costly problem within the surgical setting.<sup>1</sup>

The issue of WSS errors is not new. Prior to the release of the Institute of Medicine’s (IOM) report *To Err Is Human*, there was no process for recognizing, reporting and tracking injuries and near misses in the surgical setting.<sup>3</sup> As such, surgeons were largely unaware of the widespread nature of this issue.<sup>3</sup> Following the release of the IOM report, a 2003 Joint Commission summit brought together a multi-disciplinary team of health care professionals to examine and address the scope of WSS.<sup>3,5</sup> Their work led to the creation of a protocol, *The Universal Protocol for Preventing Wrong Site, Wrong Procedure, and Wrong Person Surgery*.<sup>3,5</sup>

Rooted in prevention theories derived in high-risk industries like aviation and nuclear weaponry, the Universal Protocol outlines three key elements for systems change to prevent WSS.<sup>3</sup>

1. Pre-operative verification
2. Marking the operative site
3. Taking a time-out

In 2009, The Joint Commission charged its newly formed Center for Transforming Healthcare with the task of addressing the problem of WSS.<sup>5</sup> Thomas Jefferson University and Hospitals (TJUH) was one of eight organizations that agreed to participate in a WSS project. The Jefferson organization has 57 operating rooms across all campuses, and performed over 38,000 surgical procedures last fiscal year.

The Wrong Site Surgery project is designed to address the problem using Robust Process Improvement (RPI) methods.<sup>5</sup> RPI is a fact-based, systematic, and data-driven problem-solving methodology that incorporates tools and methods from both the Lean Six Sigma and change management methodologies.<sup>5</sup> Lean Six Sigma is a business methodology that aims to eliminate variation in product by employing lessons learned the manufacturing setting. Using RPI, the project teams measure the magnitude of the problem (or in the case of WSS, the specific problems that increase the risk of this event), pinpoint the contributing causes, develop specific solutions that are targeted to each cause, and then thoroughly test the solutions in real life situations.<sup>5</sup>

The TJUH project focused on Orthopedic services. Because of the laterality that is inherent in these procedures, Orthopedics ranks nationally among the top five service lines in which WSSs most commonly occur.<sup>3</sup> At TJUH, every step in the process of scheduling and preparing a patient for surgery was reviewed to identify potential variations that could lead to errors.

After building a team and identifying key stakeholders, TJUH members set about initiating processes to measure inconsistencies and variations from policies, standards, and standard operating procedures. The team quickly discovered opportunities for improvement during the scheduling phase, including incomplete paperwork, illegible writing, and missing documentation. Within the actual operating room suites, the team observed that not all surgical team members were actively engaged in the time-out process. It was also noted that some site markings tended to fade after the application of the surgical scrub. In all of the areas, the team noted staff members appeared to be rushed to complete all tasks prior to the start of the surgical procedure. The findings at TJUH very closely mirrored the common contributions to errors found in a much larger 2007 state wide study performed by Clarke, Johnston and Finley.<sup>7</sup>

Following an examination of their findings, the TJUH team instituted several significant changes within the study areas. To improve the accuracy of the scheduling process, fax numbers were consolidated and a process was created to notify physician offices prior to the day of surgery when primary documents were missing. The team also redesigned the scheduling form to eliminate unnecessary or irrelevant fields. As a result of these changes, the proportion of variation in the scheduling area improved from 77% to 35%. The rates were calculated using data obtained from baseline audits compared to post solutions implementation. The data was submitted to the Center for Transforming Healthcare and entered into the electronic program.

In the pre-operative holding area, the surgical marker was changed to one that would not be removed by the operative site preparatory scrub. Education was provided to the staff to reinforce the importance of verifying the patient’s identity and comparing their verbalized information against the signed surgical consent. Lastly, the team mandated that all regional blocks performed

by anesthesia personnel have both a formal pre-procedure time-out and a standard site marking. As a result of these revised processes, the rate of variation was reduced from 73% to 12%.

Processes in the operating room suites were revised to include the implementation of a role-based time-out. The role-based time-out and the development of a surgical safety checklist (based on the WHO Surgical Safety Checklist) engages the entire surgical team and ensures their active participation in the time out process. The TJUH team also devised and implemented a modified staffing model for the orthopedic service, which included an increase from two to three staff members assigned for most rooms. This addition

was a direct result of the findings of a pre-assessment nursing survey which identified that nurses felt rushed when setting up the cases. As a result of these process changes, the rate of variation was reduced from 68% to 48%.

Collaborating with the Joint Commission Center for Transforming Healthcare in the Wrong Site Surgery initiative was an excellent opportunity to learn from other health care organizations throughout the country. The engagement provided hospital leadership with tools to improve current processes and measure improvement. The project results were shared with the hospital community at large and support the TJUH mission of providing safe, quality healthcare to our patients. ■

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### REFERENCES

1. Agency for Healthcare Research and Quality. Patient Safety Net. Patient Safety Primers. Never events. <http://psnet.ahrq.gov/primer.aspx?primerID=3>. Accessed on February 9, 2012.
2. The Leapfrog Group. Fact Sheet. Never Events. [http://www.leapfroggroup.org/media/file/Leapfrog-Never\\_Events\\_Fact\\_Sheet.pdf](http://www.leapfroggroup.org/media/file/Leapfrog-Never_Events_Fact_Sheet.pdf) Accessed April 19, 2012.
3. Mulloy DE, Hughes RG. Chapter 36. Wrong site surgery: A preventable medical error. In: Hughes RG, ed. *Patient Safety and Quality: An Evidence-Based Handbook for Nurses*. Rockville, MD: Agency for Healthcare Research and Quality; 2008:2-382 – 2-395. <http://www.ncbi.nlm.nih.gov/books/NBK2678/pdf/ch36.pdf>. Accessed on November 10, 2011.
4. Boodman SG. The pain of wrong site surgery. *The Washington Post*. June 20, 2011. [http://www.washingtonpost.com/national/the-pain-of-wrong-site-surgery/2011/06/07/AGK3uLdH\\_story.html](http://www.washingtonpost.com/national/the-pain-of-wrong-site-surgery/2011/06/07/AGK3uLdH_story.html). Accessed on November 10, 2011.
5. Joint Commission Center for Transforming Healthcare. The wrong site surgery project. [http://www.centerfortransforminghealthcare.org/UserFiles/file/CTH\\_Wrong\\_Site\\_Surgery\\_Project\\_6\\_24\\_11.pdf](http://www.centerfortransforminghealthcare.org/UserFiles/file/CTH_Wrong_Site_Surgery_Project_6_24_11.pdf). Accessed March 26, 2012.
6. The Joint Commission. Sentinel event statistics as of September 30, 2010. [http://www.jointcommission.org/assets/1/18/Stats\\_with\\_all\\_fields\\_hidden30September2010\\_\(2\).pdf](http://www.jointcommission.org/assets/1/18/Stats_with_all_fields_hidden30September2010_(2).pdf). Accessed on February 9, 2012.
7. Clarke JG, Johnston J, Finley ED. Getting surgery right. *Ann Surgery*. 2007; 243(3):395-405. <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC1959354/?tool=pubmed>. Accessed on February 9, 2012.