Wrong Site Surgery: Reasons and Implications

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Introduction

Wrong site procedures remain a public health concern. In 1998, a review of 15 cases of wrong site surgery procedure or person surgeries had been reported to JCAHO (Joint Commission on Accreditation of Healthcare Organizations)2, and by 2001, this figure had risen to 156 reported cases of these, 76%, involved surgery on the wrong body part (site), 13% involved surgery on the wrong patient, and 11% the wrong surgical procedure3. While 81% of these cases were self-reported, and despite the significant media attention given to some of the cases, evidence suggests a significant amount of under-reporting to JCAHO by health care organizations4.

At the time of its original alert in 1998, the JCAHO identified several factors contributing to an increased risk of wrong site surgery. These risk factors, as identified by emergency cases, unusual patient characteristics such as a physical deformity or severe obesity, multiple surgeons involved in the care of the same patient, insufficient time pressures to start or complete a case, unusual equipment or set up in the operating room, and multiple procedures being conducted on the same patient either simultaneously, or sequentially, during the same trip to the operating room5. Persistent wrong site surgery remains a significant global public health burden with significant morbidity and mortality; maturing interventional strategies that have evolved from the original Universal Protocol may play a significant role.

Materials & Methods

Systematic review and meta-analysis of various patient safety data bases and peer reviewed literature.

Results

Wrong site surgery remains a public health concern. In 1998, a review of 15 cases of wrong site surgery procedure or person surgeries had been reported to JCAHO (Joint Commission on Accreditation of Healthcare Organizations)2, and by 2001, this figure had risen to 156 reported cases of these, 76%, involved surgery on the wrong body part (site), 13% involved surgery on the wrong patient, and 11% the wrong surgical procedure3. While 81% of these cases were self-reported, and despite the significant media attention given to some of the cases, evidence suggests a significant amount of under-reporting to JCAHO by health care organizations4.

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Objectives

(1) Review the magnitude of public health burden of wrong-site surgery (2) identify the most common key determinants implicated in wrong-site surgery (3) re-view the impact of the Universal Protocol as an effective interventional strategy and (4) review outstanding issues surrounding wrong-site surgery, and propose further interventional strategies.

Root Causes of Sentinel Events

The original Sentinel Event Alert by the JCAHO in 1998 included several strategies for reducing the risk of wrong site surgeries; these included the marking of the operating site and patient, preoperative assessment of the patient during this process - requiring an oral verification of the correct site in the operating room by each member of the surgical team, development of a verification process that includes all documentation related to the intended operative procedure and site, and personal involvement of the surgeon in obtaining informed consent.6 In 2001, JCAHO also suggested that surgical teams consider taking a ‘time-out’ in the operating room to identify the correct patient, procedure and site along with using active, rather than passive, communication techniques7. In 2004, JCAHO released the Universal Protocol, becoming a mandatory quality standard and consisting of three components: (i) pre-procedure verification process, (ii) surgical site marking, and (iii) surgical ‘time out’ immediately prior to starting the procedure8.

In 2008, JCAHO described a sustained increase in the number of reported wrong site surgeries in the United States9 growing to its current rate of 5-10 new cases per month, and remaining the most frequently reported sentinel event in its database; this upward trend was corroborated by similar data from states with mandatory reporting systems for medical errors10. Other studies reported that wrong site surgeries conducted on limbs or organs (other than the spine) occurred in 1 in every 112,994 operations11, and that 36.4% of wrong site surgeries cause significant harm, functional impairments and mortality12. Other studies revealed that 70% of wrong site surgeries were conducted on limbs or organs (except for the spine) occurred in 1 in every 112,994 operations13, and that 36.4% of wrong site surgeries cause significant harm, functional impairments and mortality14. With persistent high rates of wrong site surgery, JCAHO has revised and updated its Universal Protocol. The 2010 version of the Universal Protocol includes a more simplified ‘time-out’, is less prescriptive about where and when to do preprocedure verification, and applies to all surgical and nonsurgical procedures15. The updated Universal Protocol serves to provide flexibility in application to a wide diversity of procedures while improving compliance.

Conclusions

With persistent high rates of wrong site surgery, JCAHO has revised and updated its Universal Protocol. The 2010 version of the Universal Protocol includes a more simplified ‘time-out’, is less prescriptive about where and when to do preprocedure verification, and applies to all surgical and nonsurgical procedures. The updated Universal Protocol serves to provide flexibility in application to a wide diversity of procedures while improving compliance.

References

4. Wrong-site surgeries seen as rare, preventable.” The World Health Organization (WHO) released a study that showed a decrease in overall morbidity and mortality from 11% to 7% and 1.8% to 0.6%, respectively, in 6 different hospitals worldwide following implementation of the intraop- erative WHO Surgical Safety Checklist (Figure 4).
5. Persistent wrong site surgery remains a significant public health burden with significant morbidity and mortality; maturing interventional strategies that have evolved from the original Universal Protocol may play a significant role.