

Information Statement

Surgical Site and Procedure Confirmation

This Information Statement was developed as an educational tool based on the opinion of the authors. It is not a product of a systematic review. Readers are encouraged to consider the information presented and reach their own conclusions.

Orthopaedic surgical patients are at risk of surgical errors based upon procedures requiring accurate confirmation of proper limb(s), digit(s), spinal level(s), and surgical procedure(s). A recent survey study revealed that 21 percent of hand surgeons reported performing at least one wrong-site surgery.⁵ Errors in surgical confirmation contribute to wrong- patient, surgical site, side, procedure, spinal level, and implant surgery.

The American Academy of Orthopaedic Surgeons (AAOS) believes that surgeons, surgical teams, and patients are responsible for reliably confirming all surgical information needed to properly identify and perform any planned preventive, diagnostic, and therapeutic services. Proper confirmation is essential for the improvement of both the individual patient and general population and is supported through effective communication, informed patient choice, and shared decision making.

Accurate, timely and effective confirmation is supported through:

- **Surgical Team Engagement:** The operating room is similar to an airplane cockpit, where improvements in communication through 'Crew Resource Management' have demonstrated improved safety. All members of the surgical team should feel valued and are emboldened to 'speak up' and actively participate. It is the responsibility of all surgical team members to monitor and report potentially harmful situations before patient harm is caused. As with pilots and their crews' use of standardized flight procedures, use of standardized surgical systems, including the use checklists, is critically important to keep patients safe.
- **Patient Confirmation:** According to data from the Joint Commission (2006), 17 percent of wrong-site surgeries were performed on the wrong patient. Effective communication including 'Read-Backs' that use two identifiers (e.g., name and birth date or medical record number), patient/family involvement, and accurate surgical 'Time-Out' improve proper patient confirmation. According to the World Health Organization's Surgical Safety Checklist, patient identification is the first part of both the sign-in and the time-out after team introductions. The use of identification bands that cannot be removed and are worn throughout the hospitalization reduces errors.
- **Surgical Site and Procedure Confirmation:** The Canadian Orthopaedic Association introduced the "Operate through Your Initials" initiative in 1994, instructing orthopaedic surgeons to mark the incision site with their initials so that they would know the precise location through which they would make the incision. In this way the ink acts as a bull's-eye

drawing the surgeon's attention to the correct surgical site. The AAOS introduced the "Sign Your Site" safety program in 1998 designed to reduce wrong site surgeries through improved site identification. Permanent ink should be used to mark the site(s) with the patient's assistance prior to surgery and confirmed by the surgical team during the 'Time-Out' immediately prior to starting the surgical procedure. To ensure the correct spine level, the North American Spine Society recommends its "Sign, Mark, and X-ray" program (SMaX), as spinal levels are not always visually identifiable and should be confirmed with imaging.

- **Multiple Procedures and Surgical Sites Confirmation:** Many surgeries in orthopaedics contain multiple procedures and surgical sites. Confirmation of the intended multiple procedures and sites is essential to provide the safest surgical care. A separate 'Time-Out' for each separate procedure and site, with confirmation from the entire surgical team, is recommended.
- **Surgical Implant/s Confirmation:** The proper implant, including the correct side, size, and implant type, should be confirmed before being surgically implanted. Implants to be opened individually during the procedure should be confirmed by the entire surgical team prior to opening the package by reading directly from the implant package label. Use of a separate implant 'Time-Out' supports focused team communication and reduces surgical errors. Proper type, side, and/or size of individual implants, as part of a set of implants (often opened at the beginning of orthopaedic cases e.g., plates and screws) should be confirmed individually by the surgical team as each part is requested by the surgeon.

Many orthopaedic procedures include temporary implants that need to be removed before closing the incision, such as guide wires, pins, or screws inserted as guides for fracture fixation and/or drill/saw guides. These temporary implants should be counted and confirmed with a 'Read-Back' list by the surgical team. Intra-operative imaging may be useful for some procedures to confirm temporary hardware fixation removal.

- **Biopsy/Specimen Confirmation:** Surgical specimens, such as fluid/tissue for culture, analysis, or pathologic evaluation, should be identified and confirmed using the patient name and intended testing, by the entire surgical team at the time the specimen is obtained. During the 'De-Brief' as the surgery is completed, the surgical team should confirm aloud with a 'Read-Back' the specimen including the patient's name and type of testing to be performed. The confirmation of the surgical specimen should be recorded in the patient record.

The Joint Commission Universal Protocol recommends accurate and timely surgical site and procedure confirmation.⁷ Confirmation processes should be organized, customized, implemented and supported based upon individual facility/organization needs to best optimize surgical safety.

The AAOS believes that immediately prior to incision the surgeon and entire operative team should confirm the identity of the patient, read aloud and confirm the informed surgical consent, and confirm proper surgical site marking. The surgeon should lead the process of procedure confirmation. If the planned surgery involves multiple surgical sites, procedures and implants, each should be individually identified during the initial surgical 'Brief', the surgical 'Time-Out', and the final 'De-Brief', as well as confirmed individually with a 'Time-Out' before each planned separate site, procedure, and implant.

References:

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7. [Joint Commission - Universal Protocol Standard](#)

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