Quarterly Update on Wrong-Site Surgery: How to Do an Effective Time-Out in the Dark

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This update includes a quarterly update of the reports of wrong-site surgery in Pennsylvania and a failure mode and effects analysis of time-outs for laser procedures on eyes.

There were 10 reports of wrong-site surgery in Pennsylvania operating rooms (ORs) during the first quarter of 2014, the third consecutive quarter of the academic year with 10 reports (see the Figure). This is an improvement from 2009–2011, when there were five consecutive quarters with 16 reports. However, many of the reports were repetitions of problems whose prevention strategies are known and have been discussed.[1-3]

Anesthetic blocks administered at the wrong location continue to be the most common wrong-site procedure reported from Pennsylvania operating suites. Of the 10 events reported this quarter, 2 were lower-extremity blocks administered by anesthesiologists and 2 were local blocks administered by the operating surgeons. One of the latter two illustrates the importance of doing a separate formal time-out for an anesthetic block unless the surgeon is performing the anesthetic block and incision in continuity after the surgical field has been prepped and draped:[1]

> *The consent stated [surgery] on the left ankle. The left ankle was marked by the surgeon in the pre-op holding area. In the OR, the surgeon proceeded to inject Marcaine into the right ankle without asking nurses for a time-out, while the circulating nurse was on the phone. The circulating nurse [later] washed the right ankle with chlorhexidine with a scrub brush. The scrub nurse painted the right ankle with ChloraPrep, and then the surgeon requested a tourniquet. The circulating nurse obtained the tourniquet and saw the mark on the left ankle. The surgeon was informed and the consent reviewed. A prep was then performed on the left ankle and the procedure began.*

Two reports of stents placed in the wrong ureter were added to the 19 prior reports. The problem of stenting the wrong ureter was discussed in 2010, and the advice at that time remains valid: the surgeon should obtain an intraoperative imaging study to confirm proper stent placement, with the interpretation documented at the time.[1]

For the eighth time in 10 years, a report was received that a surgeon made an incision for a carpal tunnel release on a patient who was to have a trigger finger release. This problem was also discussed in 2010, and the advice at that time remains valid: the surgeon should make the mark as close as possible to the incision site, and the time-out should be done as close as possible to making the incision.[1]

Near-miss reports continue to demonstrate both areas of continued weakness and the effectiveness of the evidence-based best practices to prevent wrong-site surgery.[2,3]

The role of the surgeon's office in preventing wrong-site surgery due to errors in scheduling or consents was discussed in a recent article in the *Bulletin of the American College of Surgeons*. Incorrect or inadequate information received from the surgeon's office with respect to the OR schedule or consent accounted for 9% of all wrong-site surgical procedures—1 out every 11.[4]

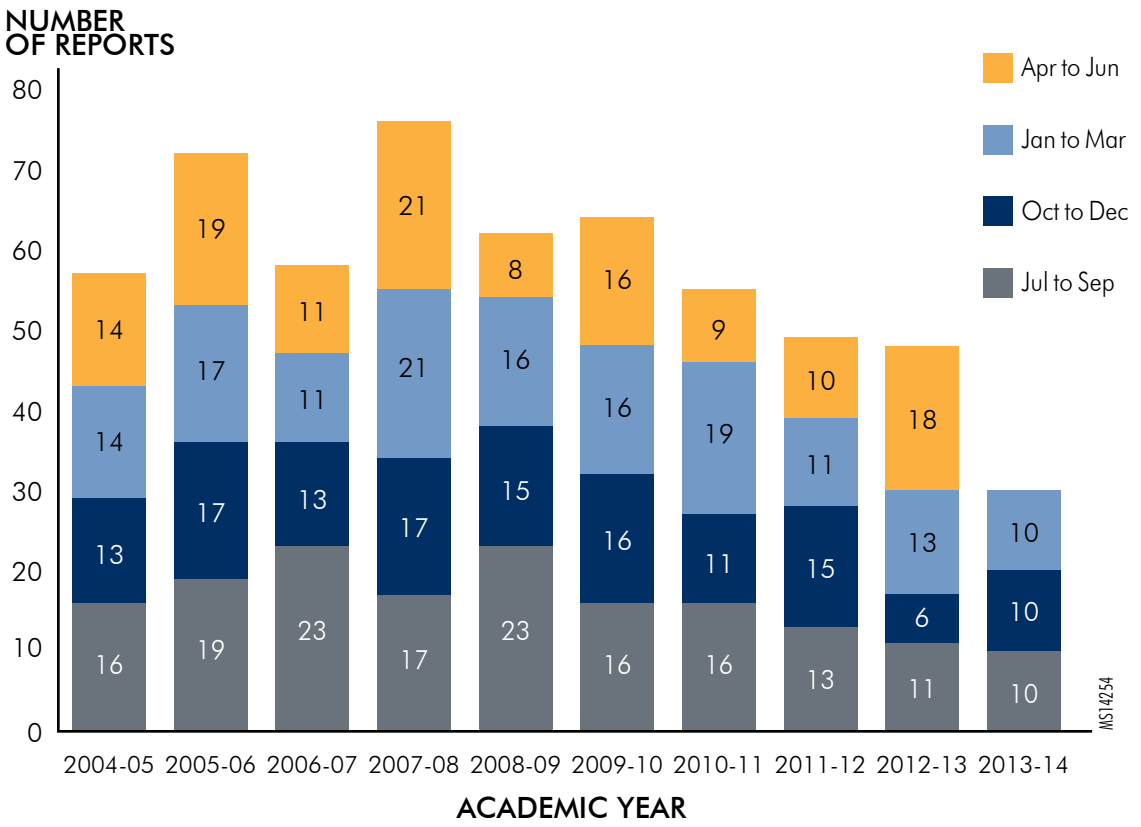
Numerous patients were scheduled incorrectly, with some repercussions:

> *Patient is scheduled to have a left shoulder scope. Physician pre-op orders state left knee scope. Contacted preadmission testing department to have documents corrected. Chart corrected prior to the day of surgery.*

> *Incorrect paperwork [identified] in pre-op during the verification process. Pre-op physician orders state right shoulder surgery. Patient is scheduled to have right knee meniscectomy. Call placed to preadmission testing to have paperwork corrected prior to surgery.*

Scan this code with your mobile device's QR reader to access the Authority's toolkit on this topic.

Figure. Pennsylvania Patient Safety Authority Wrong-Site Surgery Reports by Academic Year



Patient on OR schedule for left ganglion block. During [the intake] interview, the patient stated right-side pain and right-sided injection. Consent signed for right ganglion block. MD confirmed right side to be performed. Reservation form from physician's office pulled and revealed incorrect side on office form sent to scheduling office (listed left side).

MD's office scheduled the patient for a right MPJ [metatarsal phalangeal joint] fusion with plate and screw fixation; patient's consent and MD's notes state left MPJ fusion with plate and screw fixation. Left side also marked by MD. Error on scheduling from MD's office.

Reservation and consent from surgeon's office stated left, but H&P [history and physical] and patient's statement explain it is the right hip joint.

Patient on OR schedule for trach [tracheostomy] and PEG [gastrostomy tube] placement. Patient did not need trach or PEG placed. [No surgical consultation] on the case. OR asked to identify medical record number and birthdate. They were correct. Husband called to check; husband unaware of any scheduled surgery. No consent signed. No orders written. Patient not sent to OR. Surgeon initially gave wrong name to [OR scheduler].

Consent for surgery, emergency room MD report, surgeon, chest x-ray, and patient state left VATS [video-assisted thoracopic surgery], and OR schedule said right VATS, and OR was set up for right-sided procedure. . . . OR notified and case delayed due to wrong setup.

Patient on OR schedule for [open] repair left inguinal hernia. Permit for laparoscopic left inguinal hernia repair. Case was scheduled incorrectly based on information from surgeon/surgeon's office. Surgery delayed for 18 minutes in order to obtain necessary instrumentation for incorrectly scheduled procedure.

Consents continue to be obtained with incorrect or missing laterality. Other supporting patient documents have also had incorrect or missing information. Some of these errors were caught during the initial verification, but some were not caught until the patient was in the OR:

> *Staff noted that the consent was related to a right radius fracture. The left radius was the extremity with the fracture. The procedure was then planned to be performed on the correct side.*

> *Nursing noticed in pre-op that the patient was scheduled and consented for right-side surgery instead of left side. Physician notified. Patient [re-] consented for left side.*

> *Patient to have a ureteroscopy on left side. Physician's consent stated right side. Staff in holding area caught the discrepancy and investigated. . . . Error corrected before procedure.*

> *The patient was in the OR for eye surgery. The procedure was to be on the left eye, and the consent stated the right eye. The surgeon's office was called and the corrected paperwork was sent.*

> *Original H&P documented patient to have a TKR [total knee replacement] on the left knee. Correct knee for surgery was the right. Document was corrected, and the procedure was completed on the correct right knee.*

> *When checking the chart, the consent and pre-op physician orders are missing the side of surgery. Called physician assistant to obtain corrected paperwork.*

> *When checking the patient's surgical chart, the body site was missing from the scheduling sheet, consent, H&P, and pre-op physician's order. Notified PAT [preadmission testing] to correct the paperwork prior to the day of surgery.*

In one report, the surgeon was not present during the time-out when the reconciliation was done:

> *During the time-out, it was discovered that the consent did not indicate the side. History and physical [examination] did indicate the right side. Patient was prepped and draped with the right side as surgical site. Attending surgeon not present for the time-out. The assistant surgeon was present for the time-out and confirmed that the right side was the correct side. The team members present were in agreement. Verification forms [had] indicated that consents were complete.*

The wrong charts sometimes accompanied the patients, again with some repercussions:

> *Upon arrival to the pre-op area, the patient was identified. The patient's name band and all the chart information was identified to be in error. OR was postponed until the problem was rectified.*

> *Incorrect labeling of surgical chart. Two patients with the same last name are on the surgery schedule for the same day. Surgical paperwork was labeled with the wrong patient's labels and placed in the surgical folder. The charts were returned to the front desk for resolution of the problem. Labels and charts were corrected prior to the day of surgery*

> *The patient came to block room with paperwork from another patient on the chart.*

> *Upon doing the time-out, the wrong patient stamp was noted on the consent. However, the correct patient signed the consent. Her signature also matched her signature that had been obtained in the holding area prior to procedure. The consent was correct to the actual patient's procedure; it was the patient stamp that was incorrect. The patient verified to the CRNA and circulating nurse the correct procedure in the holding area prior to going to the operating room. When doing the time-out, the incorrect printed patient name was noted on consent. The surgical assistant who obtained the OR consent was notified and came into room to see the consent. The surgical assistant mixed up the patient number when printing the OR consent from the electronic form generator.*

Late changes in plans continue to result in misinformation when all possible sources of information are not uniformly updated:

> *The surgery was scheduled for the left side. The patient's consent and H&P were completed for the right side, as the patient had decided three days ago that she wanted the right side done at this time. The discrepancy was verbalized by the patient, and the MD was notified and discussed [the situation] with the patient. The right side was confirmed.*

A surgeon marked the site without prior reconciliation of the supporting documents, which were not corrected in a timely manner:

> *The time-out noted that the patient's consent was for a right leg I&D [incision and drainage], but the physician had marked the left leg and the left leg was referred to in the H&P. Upon further investigation, the physician obtaining the consent made an error. The intended leg was the right [leg]. The consent was corrected post-op and the physician informed the patient.*

The white board in the OR was a source of incorrect information according to one report:

> *Grease board read right-side surgery. Consent and patient stated left side. Confirmed side and corrections made to grease board.*

Some surgeons still fail to appreciate that the time-out benefits them and their patients, especially in preventing the previously mentioned wrong-site blocks:

> *The surgeon started to inject the local anesthesia into the patient prior to doing the final time-out.*
>
> *The surgeon took the scalpel and made the incision without the [nurse] doing a time-out or him calling for one. The surgeon was reminded of the importance of calling and doing a time-out.*
>
> *Surgeon did not respond verbally to the procedural "time-out."*
>
> *Phase one of the time-out was completed. The surgeon was [later] asked to complete his final time-out and he would not do so.*

However, the time-out was effective in preventing wrong-site surgery:

> *Took the patient back to the operating room and did not check and confirm the side. The left leg was prepped and clipped. The surgeon applied the tourniquet to the left leg. Draped the left leg. During the surgical pause, it was discovered that the consent was for the right leg.*

HOW TO DO AN EFFECTIVE TIME-OUT IN THE DARK DURING A LASER PROCEDURE ON THE EYE

Based on a query from a nurse working in an ambulatory surgical facility, the coauthor (L.W.) took advantage of the opportunity to view a room for laser eye surgery, on a day when the ambulatory surgical facility was quieter than usual, to observe and discuss the Universal Protocol for laser procedures in this specialized room. In addition to being a unique procedure for an ambulatory surgical facility, laser eye procedures are done in a room that is dark, with only one room light. In this facility, the one light is recessed in the ceiling and is on a dimmer switch managed by the nurse and adjusted to the surgeon's preference. Another distinctive part of this procedure is the position of the patient. The patient's chin and forehead rest against the laser machine, which blocks the face and makes it impossible to see the site marking.

The observations were aided by the patient safety culture of the leaders and staff of the ambulatory surgical facility, who openly shared their descriptions of their current processes, making it possible to create a list of opportunities for improving the processes and creating a reliable, safe process for laser procedures.

The results of the observations and discussion reinforced the use of the standard Universal Protocol used for other surgical procedures, including, specifically:

- During the preoperative verification process, all documentation should be reviewed, especially the informed consent.
- The surgeon should see the patient prior to the procedure and mark the site. For a laser procedure of the eye, one could argue that the site mark is not going to be seen and therefore not needed. However, the site marking process is an important step that occurs with the patient as an active participant in establishing the correct laterality of the procedure. Acknowledging the patient and marking the site are dynamic methods to refresh the surgeon's short-term memory of the laterality of the procedure that has been agreed upon by means of the patient's informed consent. Although not mentioned by the staff of the ambulatory surgical facility, the staff of the Pennsylvania Patient Safety Authority also proposes that attaching a reflective or fluorescent wristband to the arm on the side of the procedure could be considered as an alternative to provide a lateral site mark that could be referenced during the time-out.
- The time-out in the laser procedure room should be similar to the time-out in any OR or surgical suite. Whoever is in charge of initiating the time-out should begin by asking, "Is everyone ready to do the time-out?" This alerts all the people in the room that their attention is needed.
- During the time-out, all activities in the room should stop for all participants, including the surgeon. Once all activity has stopped, the time-out should proceed. This simple step helps the participants focus their attention during the time-out.
- The leader should explicitly encourage the staff to be active participants in the time-out. A completed informed consent should be in the room during the procedure and referenced during the time-out to serve as the reference for the discussed operation, including the use of the laser.
- Prior to using the laser, the surgeon reaches around the laser machine and places a lens over the agreed upon eye. Since any mark around the eye is obscured by both the darkness and the laser machine, this step in the process is an excellent time for each person in the room to independently confirm that the surgeon has chosen the eye indicated on the consent and to stop the process if he or she has a question.

The use of laser eye procedures has resulted in atraumatic improvement of vision for patients. The safety processes used in all other areas of the OR, specifically a standard time-out, are equally important in the specialized room where laser procedures are done. A site mark around the eye is difficult to reference during the time-out because of the darkness and the laser equipment obscuring the face; therefore, alternative means of indicating laterality should be considered. The placement of a lens over the eye to be operated on by the surgeon is an extra cue that can alert staff in the room to which eye will receive the laser treatment.

NOTES

1. Quarterly update on the preventing wrong-site surgery project: digging deeper. Pa Patient Saf Advis [online] 2010 Mar [cited 2014 Apr 28]. http://patientsafetyauthority.org/ADVISORIES/AdvisoryLibrary/2010/Mar7(1)/Pages/26.aspx
2. Pennsylvania Patient Safety Authority. Principles for reliable performance of correct-site surgery [online]. 2012 [cited 2014 Apr 28]. http://patientsafetyauthority.org/EducationalTools/PatientSafetyTools/PWSS/Documents/principles.pdf
3. Pennsylvania Patient Safety Authority. Quarterly update: the evidence base for best practices for preventing wrong-site surgery. Pa Patient Saf Advis [online] 2010 Dec [cited 2014 Apr 28]. http://patientsafetyauthority.org/ADVISORIES/AdvisoryLibrary/2010/dec7(4)/Pages/151.aspx
4. Clarke JR. Is your office helping you prevent wrong-site surgery? *Bull Am Coll Surg* 2014 Apr 99(4):28-31.

Reviewer Commentary

Identifying the proper eye in a patient who is undergoing a laser procedure should start in the pre-op area when the patient is being readied. Almost all patients undergoing a laser procedure will require drops in the eye prior to the procedure. The drops are usually given by the pre-op nurse. Prior to giving the drops, the nurse should check the consent and the patient should confirm the eye being operated on. The proper mark can be placed over the operative site around that time. After the drops take effect and the patient is brought into the laser room, the doctor and nurse should have a time-out to confirm the correct eye. Although the laser room is traditionally a darkened room, the lights can be raised while the patient is being prepared.

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