Quarterly Update on Wrong-Site Surgery: Areas to Focus Attention

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Ten wrong-site procedures were reported in Pennsylvania operating suites this past quarter, the lowest yet recorded for the first quarter of any academic year since reporting began. Another two were reported belatedly for last quarter, raising the total for the last academic year to 48, which still represents the lowest total for any academic year. See Figure 1.

In particular, problems with wrong-site anesthetic blocks, wrong-side pain procedures, and wrong-level spinal surgery persist, representing 4 of the 10 reported wrong-site procedures. As yet another example of a wrong-side block, see the following:

> *Physician at bedside . . . for pre-op femoral nerve block catheter placement on right side. During pre-op block time-out, physician verified right side. Physician proceeded with catheter placement without nurse in attendance. Nurse returned to bedside and . . . realized that the procedure was being done on the left side. Nurse immediately notified physician of the incorrect side. Procedure stopped, catheter removed. . . . Time-out redone for right femoral nerve block catheter, and correct procedure was done.*

NEAR-MISS REPORTS

The following near-miss reports from this quarter illustrate both areas of continued weakness and the effectiveness of the evidence-based best practices to prevent wrong-site surgery.[1,2]

Problems with scheduling:

> *Two scheduling cards stapled together. One stated a pre-op diagnosis of AAA [abdominal aortic aneurysm] and the procedure being AAA repair. Other scheduling card has a pre-op diagnosis of right popliteal aneurysm with the procedure being ligation right popliteal aneurysm and right fem-pop bypass. . . . Computer also said pre-op diagnosis of AAA. This is the incorrect procedure according to the patient and the surgeon.*

Fixed early:

> *Upon review of the printed schedule and discussion with the patient, it was determined that the surgery was entered in by the scheduler under the wrong extremity. This was caught early, and the surgery was performed on the correct foot.*

Problems with registration and patient identification:

> *Patient presented to registration [for surgery]. However, the patient's twin sister [had been] registered. Patient was banded with sister's information [while confirming] her name and date of birth. . . . When registration went back to verify her information, the patient stated that it was her sister's information that was registered.*
>
> *Patient was registered under wrong patient [name]. Incorrect DOB [date of birth] was entered and ID [identification] bracelet and stickers were printed for this wrong patient. When registration person . . . went to get info from the patient, he discovered that this was the wrong information for this patient.*

Preoperative verification and marking continue to be done ineffectively or not at all:

> *Patient arrived in OR [operating room]. Operative consent stated incision and drainage of right middle finger. Patient's right index finger marked for surgery, and abscess present on the index finger. Patient stated procedure to be done on the index finger. Consent changed by the surgeon in the OR to "Incision and drainage of right index finger."*
>
> *Upon reviewing the consent during the time-out, it was noticed that the . . . consent did not specify the area of the spine that was to be exposed. The consent should have read "exposure of the lumbosacral spine" but instead read "exposure of the spine."*

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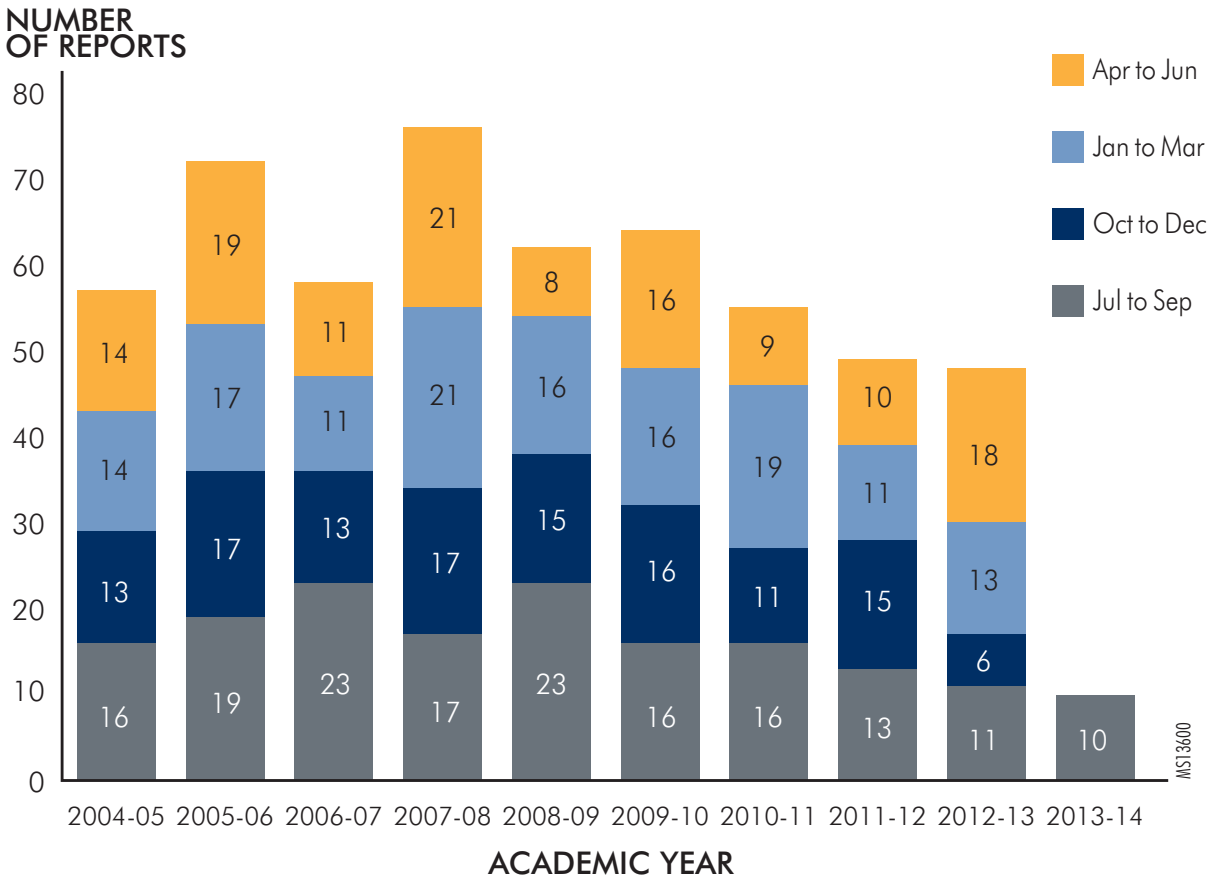
Figure 1. Pennsylvania Patient Safety Authority Wrong-Site Surgery Reports by Academic Year



Note from the preceding examples that discrepancies on the consents are to be identified during the preoperative verification process prior to the patient entering the OR.

> *Called [surgeon] to notify him of situation. Surgeon [came] in five minutes later and performed time-out for wrong patient. Surgeon did not know which patient was in the room.*
>
> *Patient brought to OR without surgical site being marked and [with] no history or physical completed.*
>
> *After patient anesthetized, . . . it was noted that patient was not marked.*
>
> *Patient with [two lesions]. Patient's second surgical site not marked (only the first). Notified charge nurse. Surgeon arrived and marked [second site] with* X.

Note that the use of an X to mark the site, as indicated in the preceding example, is discouraged because it has ambiguous meanings, such as "yes, the surgery is here" and "no, the surgery is not here."

A near miss caught by an OR team member speaking up:

> *Assisting surgeon found that attending surgeon had marked the patient but that the spinal levels [marked] were not correct. Attending surgeon checked the patient with the consent and x-rays. Patient was correctly marked before the start of the case.*

An example of the patient providing incorrect information:

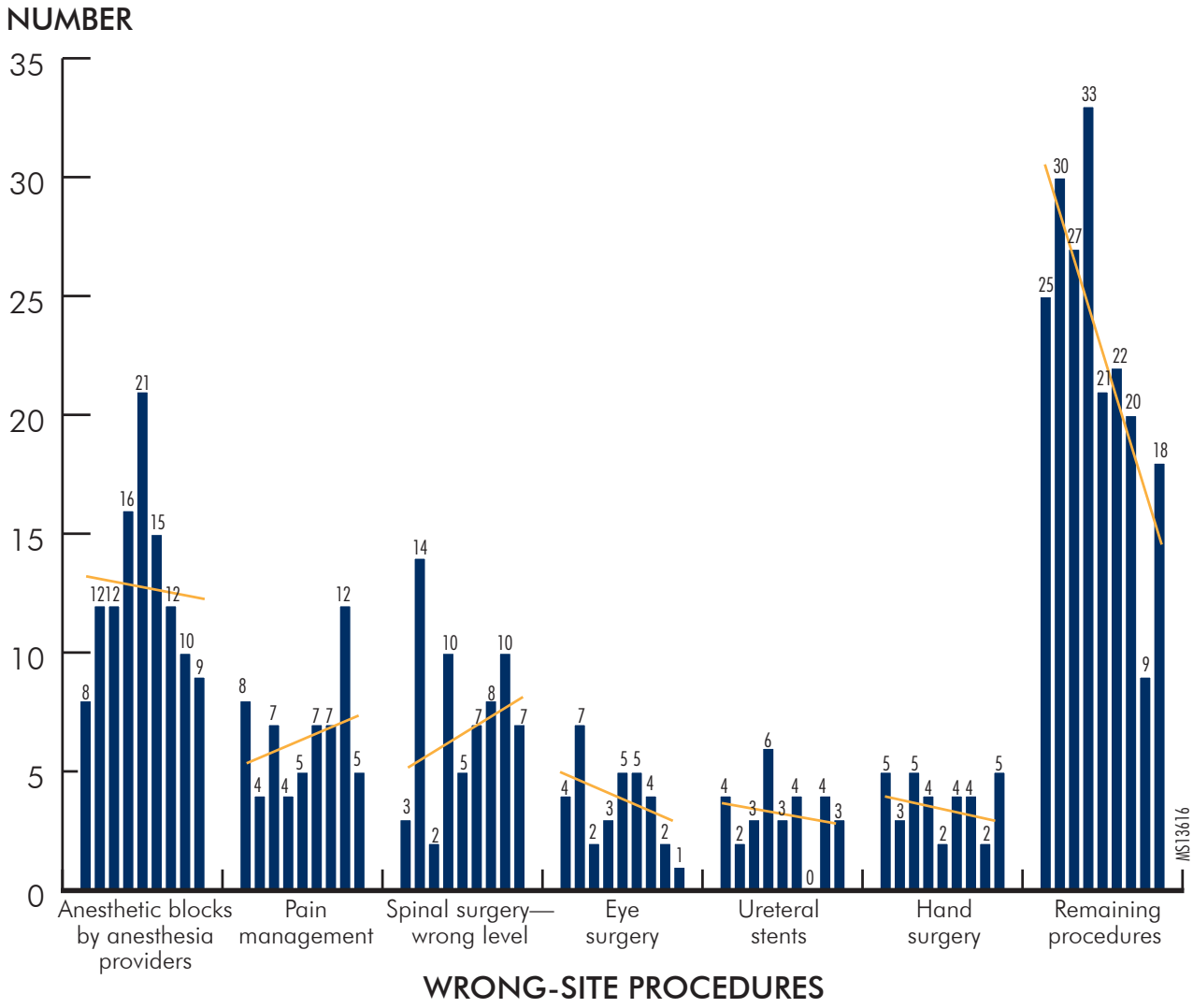
> *Patient surgical site verified in holding area. Patient verified right total hip. When brought to OR, patient stated he was to have right shoulder done. Family called to verify correct procedure. . . . [Right hip also] verified by surgeon.*

Note that the operating team not only checked in reconciling the information but also double-checked.

There were a number of chart problems reported this quarter:

> *Patient was on OR table being draped. Staff member called for a time-out, but the patient's chart and*

Figure 2. Trends in Pennsylvania Patient Safety Authority Wrong-Site Surgery Reports by Procedure



Each procedure cluster of bar values represents academic years, from left to right, spanning 2004-2005 through 2012-2013.

consent had not been brought [to the OR] with the patient from the holding area. The chart and consent were brought to the OR, and the time-out was completed.

Patient arrived in block room. . . . On his chart, I found information for two other patients.

Anesthesia brought the correct patient to the room with the chart for a different patient. The error was found during the in-room interview between the patient and the circulator.

Another near miss, again caught by an OR team member speaking up:

Patient was in the OR for total left knee. During the time-out, staff read incorrect patient information. Other staff in the room noted this error and corrected it till all were in agreement, and the case was then performed . . . as planned.

And notably, a good catch during a time-out for an organ donation:

The OR team [was sent] an e-mail with the UNOS [United Network for Organ Sharing] number prior to surgery. That number did not match exactly when the organ time-out was done. [Situation identified and corrected.]

Table. Most Common Wrong-Site Procedures in the Operating Suite by Type, July 1, 2004, through June 30, 2013 (N = 541)

PROCEDURE	NO.	%
Anesthetic blocks by anesthesia providers	115	21
Spinal surgery—wrong level	66	12
Pain management	59	11
Hand surgery	34	6
Eye surgery	33	6
Ureteral stents	29	5
Remaining procedures	205	38

Note: Percentages do not add up to 100 due to rounding.

As in the previous quarter, specimens were identified as having been mislabeled:

> *Specimen received in cytology with incorrect side from patient labeled. Received labeled as "left" renal washing, when it was from the "right."*
>
> *The pathologist was in the frozen section room performing frozen sections for the surgeon. Upon grossing the first specimen labeled right cheek, the pathologist noticed the sutures marking the margins did not correlate with the [description of the] specimen on the right side. The RN [registered nurse] who brought the specimen out said it was mislabeled and should have been labeled left cheek. The frozen section was then completed. As . . . the pathologist was grossing the second specimen, labeled left cheek, the pathologist again said the sutures did not match the specimen being from the left side. After a discussion with the RN, the surgeon came out to the frozen section room to discuss the issue with the pathologist. Upon the surgeon coming out, they discovered the specimens were placed into the wrong containers. The first specimen originally labeled right cheek was actually the specimen from the left cheek [and vice versa].*

As cited in a previous *Pennsylvania Patient Safety Advisory* article, Bixenstine et al. reported a study in which 23.8% of surgical specimens had their laterality labeled incorrectly.[3]

MAJOR AREAS OF FOCUS

In a previous update, the most common wrong-site procedures were identified.[4] The six most common, each representing 5% or more of all wrong-site procedures, are listed again in the Table, adjusted for the addition of the two new reports from the second quarter of 2013.

These six wrong-site procedures were tracked by year and compared with the remaining wrong-site procedures (see Figure 2). Overall, wrong-site procedures have trended down 3.4% per year in reference to the overall yearly average. Compared with the remaining 38% of wrong-site procedures, which have trended down an average of 8.5% per year in reference to their yearly average, only eye surgery has seen a similar downward trend (9.5%). Ureteral stenting and hand surgery have less downward trending than the overall yearly average (3.1% and 2.2%, respectively). Anesthesia blocks have been relatively unchanged (trending down 0.4% per year), while spinal surgery and pain management procedures have trended toward more wrong-site procedures (upward 3.0% and upward 3.8% per year, respectively).

These yearly trends suggest that the focus should be directed toward improving the three most common types of wrong-site procedures: anesthesia blocks, pain management procedures, and wrong-level spinal surgery.

NOTES

1. Pennsylvania Patient Safety Authority. Principles for reliable performance of correct-site surgery [online]. 2012 Dec [cited 2013 Oct 21]. http://patientsafetyauthority.org/EducationalTools/PatientSafetyTools/PWSS/Documents/principles.pdf
2. Quarterly update: the evidence base for best practices for preventing wrong-site surgery. Pa Patient Saf Advis [online] 2010 Dec [cited 2013 Oct 21]. http://patientsafetyauthority.org/ADVISORIES/AdvisoryLibrary/2010/dec7(4)/Pages/151.aspx
3. Bixenstine PJ, Zarbo RJ, Holzmueller CG, et al. Developing and pilot testing practical measures of preanalytic surgical specimen identification defects. *Am J Med Qual* 2013 Jul-Aug;28(4):308-14.
4. Clarke JR, Arnold TV. Quarterly update on wrong-site surgery: work to be done. Pa Patient Saf Advis [online] 2013 Sep [cited 2013 Oct 21]. http://patientsafetyauthority.org/ADVISORIES/AdvisoryLibrary/2013/Sep;10(3)/Pages/110.aspx

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