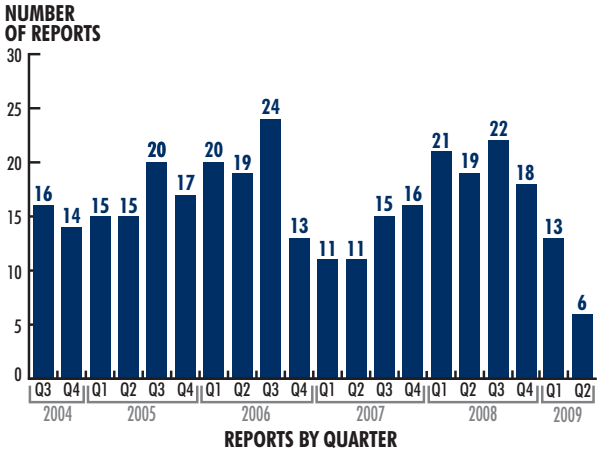
Improvement in Preventing Wrong-Site Surgery! Traction or Transient?

The latest update from the Pennsylvania Patient Safety Authority's reporting system database shows an encouraging decrease in the number of reports of wrong-site surgery for the third consecutive quarter (despite adjustments for late reports) to an all-time low of six reports (see Figure). This is the most sustained statewide decrease in wrong-site surgery events to date. Furthermore, a regional collaborative to prevent wrong-site surgery that began in March 2008 reported zero wrong-site surgeries during the second quarter of 2009, meaning facilities participating in the collaborative have reported only two events in more than seven months and none in more than four months. The collaborative's time without wrong-site surgery exceeds 95% of its previous event-free intervals. The Authority continues to monitor wrong-site surgeries and plans to replicate the collaborative in another region.

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



The six reports during the second quarter of 2009 all described problems previously addressed by the Authority:

- One report described a wrong-site surgery based on an incorrect side listed on the schedule. The Authority advocates checking the accuracy of the site on the schedule by reconciling the schedule with the history and physical, physician order, and consent.
- Three reports described wrong-site anesthesia blocks without referencing the site mark. Many wrong-site procedures are wrong-site anesthesia blocks that could be prevented by a formal time-out before such procedures.
- One report described doing the time-out before prepping the patient. The wrong site was then prepped. The Authority advises doing the time-out after prepping and draping, with the site mark visible in the field.
- One report, edited for contextual deidentification, is described in full because it includes many causes of wrong-site surgery. (The reader is encouraged to take a moment to list as many causes he or she can and then compare those causes with the causes that the Authority's analysts identified.)

  The patient arrived for ordered left YAG laser iridotomy for glaucoma. The patient was identified and prepped for this procedure. When the surgeon arrived, the nurse performed a time-out using the original physician order and the consent, both indicating that the patient was to undergo a left YAG laser iridotomy for glaucoma. The doctor informed the nurse that the nurse was wrong. The nurse showed the doctor the original order and consent signed by the patient in the office. The doctor insisted the patient was to have left YAG laser capsulotomy for posterior capsule opacification. The doctor overruled the information from the time-out and performed a left YAG laser capsulotomy for posterior capsule opacification. At the end of the procedure, the doctor realized an error had been made and then performed the correct procedure on the patient's left eye. Investigation of the event revealed that the surgeon had two patients scheduled back-to-back that afternoon: the first for a capsulotomy and the second for an iridotomy. The patients were taken to the [operating room (OR)] out of order due to their arrival time. Even though the nurse identified the patient correctly and performed a time-out correctly indicating a left iridotomy procedure, the surgeon "pulled rank" and insisted on doing a left capsulotomy, which was originally the first procedure on the schedule that day.

The facility identified two problems: (1) the lack of situational awareness about the change in the OR schedule and (2) the use of hierarchy to resolve a conflict. The Authority's analysts also identified the failure of the surgeon to see the patient before the patient entered the OR to verify the correct information, the failure to verify information with the patient, reliance on memory rather than documentation, the failure to reconcile conflicting information, the failure to have office records available for reference, the failure to empower the nurse, and the failure to satisfactorily address a concern raised by a member of the operating team.

Although Pennsylvania facilities are reporting fewer wrong-site surgeries, one of the above reports was from a facility that had never previously reported a wrong-site procedure in the five years of mandatory reporting to the Authority, despite a large volume of surgery. Its report is an example that facilities must always be aware of the possibility that the next case may involve wrong-site surgery.

If surgical facilities are to hold their gains in consistently performing correct-site surgery, the following principles for reliable performance of correct-site surgery, identified by the Authority during its Preventing Wrong-Site Surgery Project, should be consistently followed:

1. The correct site of the operation should be specified when the procedure is scheduled.
2. The correct operation and site should be noted on the record of the history and physical examination.
3. The correct operation and site should be specified on the informed consent.
4. Anyone reviewing the schedule, consent, history and physical examination, or reports documenting the diagnosis, should check for discrepancies among all those parts of the patient's record and reconcile any discrepancies with the surgeon when noted.
5. The surgeon should bring copies of supporting information uniquely found in the office records to the surgical facility the day of surgery.
6. All information that should be used to support the correct patient, operation, and site, including the patient's or family's verbal understanding, should be verified by the nurse, anesthesia provider, and surgeon before the patient enters the OR.
7. All verbal verification should be done using questions that require an active response of specific information, rather than a passive agreement.
8. Patient identification should always require two unique patient identifiers.
9. Any discrepancies in the information should be resolved by the surgeon, based on primary sources of information, before the patient enters the OR.
10. The site should be marked by a healthcare professional familiar with the facility's marking policy, with the accuracy confirmed both by all the relevant information and by an alert patient, or patient surrogate if the patient is a minor or mentally incapacitated.
11. All information that should be used to support the correct patient, operation, and site, including the patient's or family's verbal understanding, should be verified by the circulating nurse upon taking the patient to the OR.
12. Separate formal time-outs should be done for separate procedures, including anesthetic blocks, with the person performing that procedure.
13. The site mark should be visible and referenced in the prepped and draped field during the time-out.
14. Verification of information during the time-out should require an active communication of specific information, rather than a passive agreement, and be verified against the relevant documents.
15. All members of the operating team should verbally verify that their understanding matches the information in the relevant documents.
16. The surgeon should specifically encourage operating team members to speak up if concerned during the time-out.
17. Operating team members who have concerns should not agree to the information given in the time-out if their concerns have not been addressed.
18. Any concerns should be resolved by the surgeon, based on primary sources of information, to the satisfaction of all members of the operating team before proceeding.
19. Verification of spinal or rib level should require radiological confirmation, using a stable marker and readings by both a radiologist and the surgeon.
20. All paperwork and labels for a patient in an OR should be cleared before the next patient arrives.
21. Information identifying surgical specimens should be verified with the surgeon via active communication of specific information, rather than a passive agreement.

Survey on Surgical Site Marking Pens and Techniques

In July 2009, the Authority's analysts distributed a survey, through Patient Safety Officers (PSOs), for OR managers in Pennsylvania hospitals and ambulatory surgical facilities to share their good and bad experiences using various marking pens with various skin preparation agents. OR managers were asked to report the visibility of their markers with their various skin preparations and to relay any complaints from patients.

Within three weeks, the Authority received 106 responses of facility experiences. The results of the survey are available in two tables on the Authority's Web site.* Table 1 lists experiences according to the markers, and Table 2 lists experiences according to the skin preparation agents. (Although respondents were not asked to list multiple products, some did; hence, the number of evaluations exceeded the actual number of survey responses.) Experiences are reported for visibility of the mark after skin preparation and for patient complaints about the marks. Cardinal Health markers were almost always reported to be visible with no patient complaints, although the specific Cardinal Health products were not listed in the reports. Viscot Medical Precision surgical skin markers received comparable reports, albeit with fewer

* The Pennsylvania Patient Safety Authority has a Web page devoted to educational tools for preventing wrong-site surgery (available at http://www.patientsafetyauthority.org/EducationalTools/PatientSafetyTools/PWSS/Pages/home.aspx). Its resources include all the Authority's publications on the subject, including self-assessment tools, sample forms and checklists, educational posters and videos, illustrative figures and tables, patient-education brochures, and online information available from other Web sites.

experiences and one comment that the ink needs adequate time to dry.

Only 3 of the 106 facilities reported surgeons' concerns about the sterility of marks in a prepped surgical field. In a prior review, the Authority reported no documented concerns in the medical literature regarding the sterility of single-use marking pens.[1]

The Time-Out Script Competition

The Authority has posted five entries for the Time-Out in the OR Script Competition online at http://www.patientsafetyauthority.org/EducationalTools/PatientSafetyTools/PWSS/Pages/scripts.aspx.

The first round of open-ended review and comment remains active for all who wish to participate. The *Pennsylvania Patient Safety Advisory* editors appreciate the review comments submitted to date. The editors may publish some of the critiques during the second round but will not identify any reviewers. The reviews may make a general comment on any script or comment on any parts of any scripts, positively or negatively, but should specifically consider at least three issues: (1) compliance with the time-out elements of the Universal Protocol intended to prevent wrong-site surgery, (2) active participation of all the important members of the operating team, and (3) efficiency. Efficiency will be defined as the length of time involved in performing the script. As mentioned in the March 2009 issue of the *Advisory*, the time should ideally be less than 90 seconds. Please note that the script competition includes only the parts of a time-out script that identify the patient, procedure, and side or site of the procedure. Implants availability, antibiotic administration, allergies, and other additions to the Universal Protocol not related to preventing wrong-site surgery have been eliminated from the time-out scripts. Elements of the time-out that involve confirmation or documentation not based on conversation have also been eliminated. Please send your reviews and comments on any or all components of any or all scripts electronically to the editor at jclarke@ecri.org. Please ensure comments are linked to specific scripts by their numbers. This is your chance to help shape robust scripts for time-outs.

The Authority remains committed to decreasing and eventually eliminating wrong-site surgery. The Authority welcomes any comments, suggestions, and specific inquiries from facilities with specific problems or questions concerning wrong-site surgery. For example, PSOs at facilities that experience wrong-site surgery could contact the Authority to assist in root-cause analysis. Communications should be directed to: John Clarke, MD, FACS, clinical director of the Pennsylvania Patient Safety Authority, at ECRI Institute, by telephone at (610) 825-6000 or by e-mail at jclarke@ecri.org.

Note

1. Surgical site markers: putting your mark on patient safety. Pa Patient Saf Advis [online] 2008 Dec [cited 2009 Aug 4]. Available from Internet: http://www.patientsafetyauthority.org/ADVISORIES/AdvisoryLibrary/2008/Dec5(4)/Pages/130.aspx.

PENNSYLVANIA PATIENT SAFETY ADVISORY

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An Independent Agency of the Commonwealth of Pennsylvania

The Pennsylvania Patient Safety Authority is an independent state agency created by Act 13 of 2002, the Medical Care Availability and Reduction of Error ("Mcare") Act. Consistent with Act 13, ECRI Institute, as contractor for the Authority, is issuing this publication to advise medical facilities of immediate changes that can be instituted to reduce Serious Events and Incidents. For more information about the Pennsylvania Patient Safety Authority, see the Authority's Web site at http://www.patientsafetyauthority.org.

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