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Update on Wrong-Site Surgery: More Data Provides More Insight

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Introduction

From July 2004 through September 2017, there were 779 wrong-site perioperative events, including wrong-site nerve blocks, reported through the Pennsylvania Patient Safety Reporting System (PA-PSRS) and analyzed by the Pennsylvania Patient Safety Authority. This update provides an overview of the wrong-site events over time, as well as a focused analysis of the events reported between October 2016 and September 2017.

Update on Wrong-Site Surgery

Overall Results

The three most common types of wrong-site procedures reported through PA-PSRS since July 2004 have remained consistent and continue to account for about 50% of all wrong-site surgery events:

- Perioperative nerve blocks administered by anesthesiologists and surgeons (25.7%, n = 200 of 779)
- Spinal procedures (e.g., wrong level; 12.5%, n = 97)
- Pain-management procedures (12.2%, n = 95)

The percentage of wrong-site nerve blocks and spinal procedures decreased slightly since the last update published in December 2016 (i.e., 0.8% and 3.8%, respectively).[1] However, the most notable change was in the percentage of wrong-site pain-management procedures, which increased 7% from the last update. See Figure 1 for the overall number of wrong-site procedures reported to the Authority by academic year and Figure 2 for the number of wrong-site nerve blocks reported by academic year. One wrong-site event occurring in the third quarter of academic year 2016-2017 was belatedly recognized. Adjustments in the number of reported events are reflected in Figure 1.

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

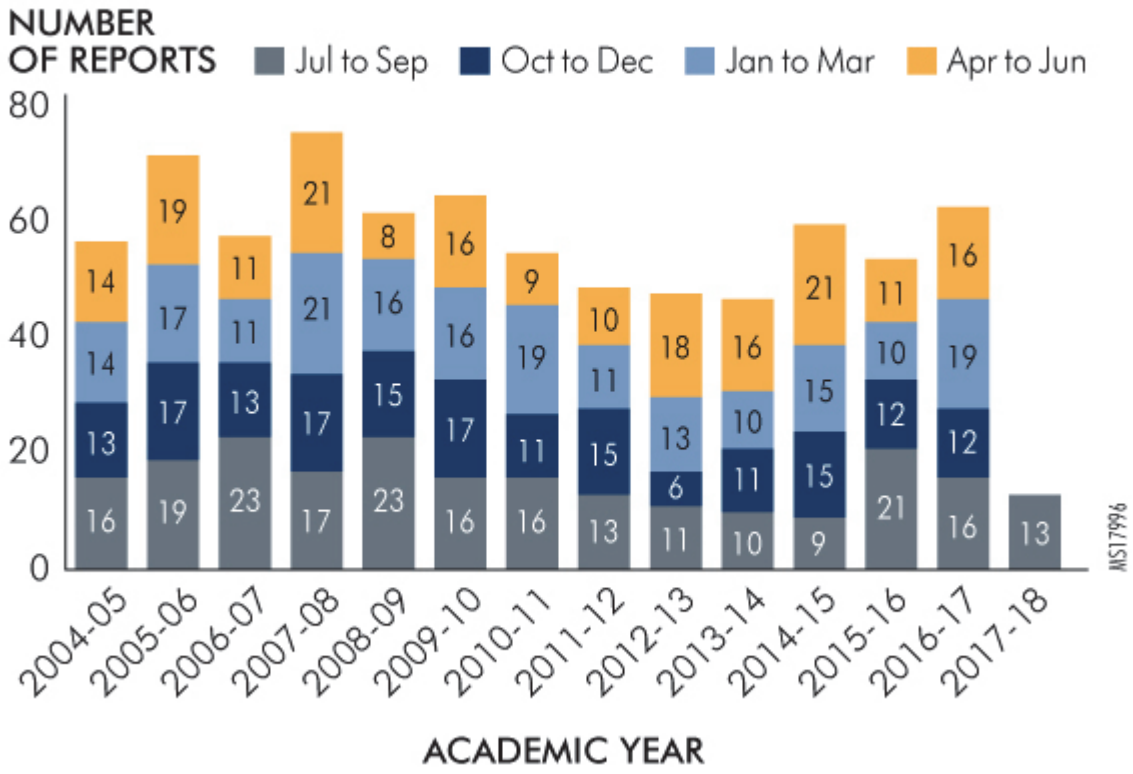
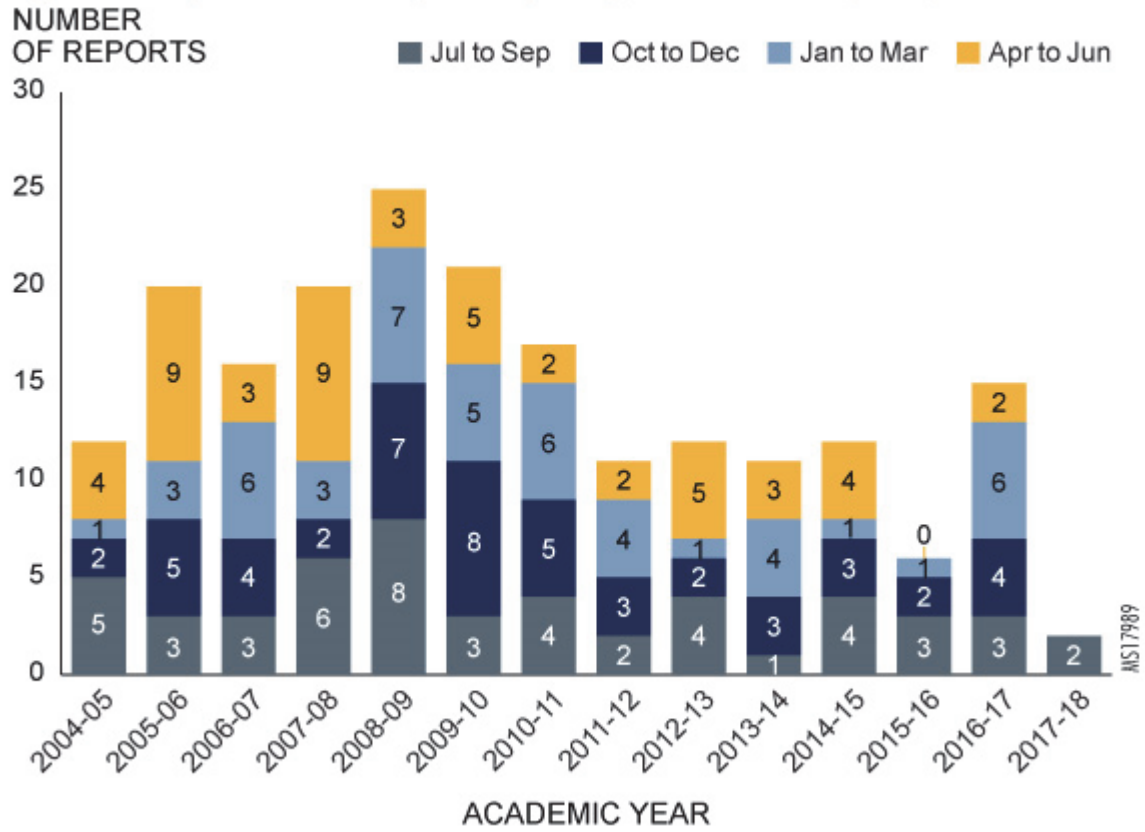


Figure 2. Pennsylvania Patient Safety Authority Wrong-Site Nerve Block Reports by Academic Year



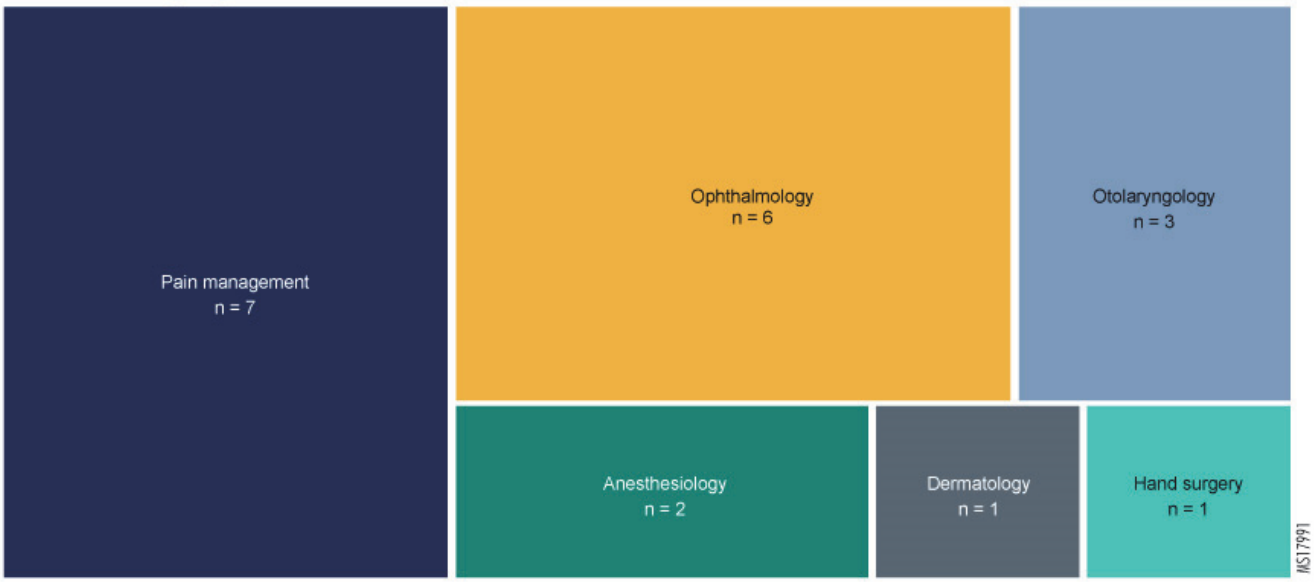
One-Year Overview

Sixty wrong-site surgery events were reported from Pennsylvania facilities since the last published analysis in December 2016 (i.e., October 2016 through September 2017). The majority of events were reported from hospitals (66.7%; n = 40 of 60) while 33.3% were reported by ambulatory surgical facilities (ASFs).

See Figures 3 and 4 for a representation of reports by clinical specialty and facility type. The most common clinical specialties for which a wrong-site event was reported during the one-year period were pain management (21.7%; n = 13), anesthesia (15.0%; n = 9), and ophthalmology (15.0%; n = 9). Although all clinical specialty types were identified in the ASF reports, 10 of the 40 reported events from hospitals did not identify a specialty.

Figure 3. Pennsylvania Patient Safety Authority Wrong-Site Surgery Reports by Clinical Specialty in Hospitals, October 2016 through September 2017

Figure 4. Pennsylvania Patient Safety Authority Wrong-Site Surgery Reports by Clinical Specialty in Ambulatory Surgical Facilities, October 2016 through September 2017



Wrong-site nerve blocks accounted for nearly one-quarter (23.3%; n = 14 of 60) of the events reported in this 12-month period. The majority of wrong-site nerve blocks were administered by anesthesiologists (n = 9) and the remaining five were administered by surgeons in various clinical specialties, including ophthalmology, orthopedics,

and otolaryngology. All wrong-site nerve blocks were administered on the wrong side of the body. Pain management procedures (the majority of which were wrong-side spinal injections) accounted for 21.7% (n = 13) of the reported events.

The most improvement was noted in the number of wrong-site spinal procedures reported in the one-year period (6.7%; n = 4). As compared to the number of spinal events published in the last update (i.e., March 2016 through September 2016),[1] a total of five wrong-level spinal procedures were reported within the two quarters (i.e., about one event every 43 days). In the 12 months of October 2016 through September 2017, four wrong-level spinal procedures were reported (i.e., about one event every 91 days).

During the last four quarters that were analyzed, the following wrong-site surgery events were also reported (excluding wrong-site nerve blocks):

- Ophthalmology procedures (10%, n = 6 of 60), such as laser trabeculoplasty
- Urology procedures (6.7%, n = 4), such as ureteroscopy/ureteral stent placement
- Otolaryngology procedures, excluding wrong-site anesthetic injection, (5%; n = 3), such as tonsillectomy
- Procedures by various disciplines (26.7%; n = 16) including hand surgery, neurosurgery, orthopedics, pulmonology, vascular surgery, and unspecified specialties

Summary

The twelve months represented in the update (i.e., October 2016 through September 2017) show an upward trend in the number of wrong-site surgery events reported. The most common wrong-site procedures include nerve blocks and spinal injections for pain management. The Authority performs in-depth analyses based on the information available in the reports submitted through PA-PSRS. The detail provided in the event narratives allows Authority analysts to understand common causes and to suggest process improvement strategies to prevent future occurrences of wrong-site surgery. The more detail provided in the reports (e.g., medical specialties involved, special circumstances, recommendations for improvement) the more information can be learned and shared statewide. Facilities providing surgical services are urged to consult their regional Patient Safety Liaison for education opportunities and to access helpful wrong-site surgery prevention resources and tools on the Authority's website (/pst/Pages/Wrong%20Site%20Surgery/hm.aspx).

Notes

1. Arnold TV. Update on wrong-site surgery: reports from ambulatory surgical facilities. Pa Patient Saf Advis. 2016 Dec;13(4):160-2. Also available: http://patientsafety.pa.gov/ADVISORIES/Pages/201612_160.aspx (/ADVISORIES/Pages/201612_160.aspx).