Learning From Others:
A Case Report From the Anesthesia Incident Reporting System

Anesthesia Quality Institute

ANESTHESIA INCIDENT REPORTING SYSTEM (AIRS)

Review of unusual patient care experiences is a cornerstone of medical education. Each month, the AQI-AIRS Steering Committee abstracts a patient history submitted to the Anesthesia Incident Reporting System (AIRS) and authors a discussion of the safety and human factors challenges involved. Real-life case histories often include multiple clinical decisions, only some of which can be discussed in the space available. Absence of commentary should not be construed as agreement with the clinical decisions described. Feedback regarding this article can be sent by email to **airs@asahq.org**. Report incidents or download the AIRS mobile app at **www.aqiairs.org**.

Case 2017-7: Which Syringe Is Which?

Case 1:

A patient was to receive a peripheral nerve block in the holding area, performed by the pain service. The attending anesthesiologist asked the resident if the patient's sedation medications were on his person. The resident stated they were in a narcotic drug bag in his pocket. The attending anesthesiologist pulled the narcotic bag from the resident's pocket, removed a fentanyl syringe and administered it. At this point another anesthesia provider entered the area with a separate narcotic bag stating they were in possession of said patient's narcotics. This prompted further investigation and revealed that the patient had received fentanyl from a syringe that had been used to sedate a previously blocked patient. The narcotics bag was marked with a patient label but individual syringes were not. It is common practice for providers to carry multiple patient bags with them. This should not occur.

Case 2:

A 2-year-old patient was induced with propofol for intubation. After administration it was discovered that the syringe of propofol had been used on the previous patient and was left on the working surface of the anesthesia cart instead of being discarded properly. The syringe was properly labeled. The drugs intended for the current case were in a drawer of the cart and not visible or easily accessible. Because the error was discovered late while accounting for wasted drugs and the first patient was already discharged, both patients had to be recalled to the hospital for blood testing.

Case Discussion

Medication errors have been discussed in the anesthesiology literature since 1978, when Cooper et al. published a human factors analysis of anesthesiology incidents gathered through interviews.[1] In that study, "syringe swap" was the third most frequent incident type after "breathing circuit disconnection" and "inadvertent gas flow change." In the nearly 40 years since that study was published, incidents involving anesthesia machines have been significantly reduced. However, medication error remains a daily fact of life in hospitals and ambulatory surgery centers around the country. Statistics on medication error have been historically difficult to ascertain because of the limitations of self-reporting. Of the incidents recorded in AIRS, approximately 12 percent were categorized by reporters as being medication-related. The recent rigorous observational study of perioperative medication administration by Nanji et al. found that one in 20 perioperative medication administrations involve a medication error and/or an adverse drug event.[2] The top three most common medication errors were labeling errors, wrong dose and omitted medication.

In early 2010, the Anesthesia Patient Safety Foundation (APSF) held a perioperative medication safety conference and generated a consensus statement.[3] The paradigm that emerged from this conference included four domains: Standardization, Technology, Pharmacy/Prefilled/Premixed, and Culture. Since that conference, progress has been made in each domain. In March 2010, the Food and Drug Administration (FDA) issued guidance on the standards to be used for labeling prescription drug packages.

ASA and the Institute for Safe Medication Practices have independently issued guidance on how to label syringes in a standard fashion. Technology for labeling syringes, recording administrations with bar-code readers, and smarter infusion pumps have advanced in both capability and adoption. The business of commercially prefilled syringes (known as "outsourced compounded sterile preparations") has dramatically expanded. The FDA currently lists 69 licensed facilities, of which nine registered just this year.[4] The largest company, PharMEDium, was acquired for more than $2.5 billion in 2015. As for culture, since 2010 there has been a significant increase in the visibility and usage of local and national incident reporting such as AIRS. The recently updated European Board of Anaesthesiology recommendations for safe medication practice specifically state that "All anaesthetists should report any medication incidents to their local and/or national incident reporting systems ..."[5]

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The two cases presented here are notable because they both occurred due to transition of care from one patient to another. The reason that anesthesiologists are not expected to label syringes with a patient name is that usually there is only one patient in the working area. Syringes are supposed to be thrown away or returned before the next patient arrives. However, the idea of a single "working area" appears quaint to anesthesiologists performing nerve blocks and epidurals in the patient holding area. Handoff to another anesthesiology team can lead to confusion over where a specific syringe came from. Local rules for returning narcotics can lead to an accumulation of partially administered syringes in a plastic bag waiting for delivery to the pharmacy.

The reporter of the first case wrote under "Lessons Learned" that one should "Always perform the five rights of medication administration when administering a medication." The "five rights" refer to right patient, right drug, right dose, right route and right time. An additional "right" has been proposed, an accurate and comprehensive record of the medications administered and of any medications wasted.[6] The reporter in the second case noted that the extra syringe of propofol was "not discarded properly." Like these reporters, most anesthesiologists have a solid grounding in safety principles and work in organizations that have policies and procedures specifically written to reduce medication error. However, error still occurs.

Once standardization is available, technology is deployed and syringes are premixed, we still have to contend with culture. It is hard to change a culture where it is acceptable to carry around sets of waste syringes without a patient label affixed. It is difficult to convince some anesthesia professionals that a leftover syringe of propofol is a serious adverse drug event waiting to happen – in other words, a "near-miss." One of the most needed culture changes is to recognize the importance of near-misses so we can learn from those errors and prevent them from causing future patient harm. The same sequence of actions may lead to a near-miss in one case and patient harm in another, with luck being the deciding factor. The actions are modifiable, not the outcome. Production pressure and a desire to be "efficient" conspire to drive actions away from a safety focus. Share the cases presented here among your peers and ask them, "Why do we think that the behavior leading up to these events is O.K.?"

References:
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