



Pyxis Anesthesia System from CareFusion

The operating room (OR) environment is inherently stressful and issues related to proper medication management in this setting—particularly involving anesthesia—often vex pharmacy practitioners. In order to make medications readily available for surgical procedures in the past, our OR technicians simply stockpiled drugs throughout the OR. Despite the proliferation of medications, the lack of an automated inventory management system led to frequent trips between the OR suites and the central pharmacy to procure medications not accounted for. Many of the medications used in the OR are controlled substances, so we also wanted to gain a more significant level of control over these products to ensure patient safety and discourage diversion. Likewise, improved charge capture and better inventory utilization were additional drivers for change.

System Selection and Integration

Sharp Memorial Hospital is San Diego's largest emergency trauma center with 330 licensed acute care beds, 28 OR suites—12 of which are located in our outpatient surgery center—and several surgical specialties including cardiac and multi-organ transplantation. In order to enable effective access to medications, manage inventory, account for waste, and increase efficiency, our facility now employs 78 Pyxis automated dispensing cabinets, 19 of which are Pyxis Anesthesia System stations. Of those 19, two are located in the outpatient pain treatment rooms and the remaining are in the OR surgical suites.

We chose the Pyxis Anesthesia System in part because we were already using Pyxis MedStations, and implementing another vendor's product would have required extensive retooling of our information system. In addition, the array standardization, control, and reporting mechanisms appeared to fit our needs. Once in place, this system effectively replaced the use of manual medication carts in the OR to store and retrieve medications.

The most important element in effectively integrating this system into OR workflow was gaining buy-in from anesthesiologists, OR technicians, and their respective administrative directors. Accordingly, we designated an anesthesiologist as the project point person and he designed the entire layout in collaboration with his colleagues and pharmacy representatives. Although managing anesthesia drugs is essentially a medication

management issue, as end-use practitioners, we wanted our anesthesiologists to have the greatest influence on the placement and operational use of the system.

Training on the system was minimal as the cabinets operate in much the same way as our MedStations. We did set up one unit to practice on for four



Pyxis Anesthesia brought much needed organization to medication management in the OR ensuring greater pharmacy control, which was the main goal of this project.

weeks leading up to go-live and made sure pharmacists would be present in the OR for a few weeks after the go-live period to troubleshoot. Designating one or two pharmacy representatives for anesthesiologists to direct questions or concerns to going forward also is a valuable resource. Although some anesthesiologists expressed concern over the possibility of system failure, those concerns have waned over time as the systems continue to operate as indicated without any critical failures. As a final measure to help alleviate system failure concerns, we do stock a small kit of essential drugs in each OR suite.

System Use and Reporting

The top two drawers of each unit are dedicated to medications comprising 57 medication line items. This inventory includes narcotics, paralytics, anesthetics, reversal agents, antibiotics, and emergency-related drugs. As we converted to this system, we also were transitioning from unit dose vials to pre-labeled compounded syringes, so one of the first adoptions we had to adjust to was making sure we could stock enough syringes in each machine as they are inherently larger than vials.

The biggest single change for pharmacy involved the way in which medications are replenished in the cabinets. Pharmacy now has the responsibility of stocking medications in the Pyxis Anesthesia

cabinets, thereby assuring all drugs are locked and secured. This standardized organization of medications has allowed us to eliminate hidden or even overt stockpiling of medications throughout the OR. In order to reduce the impact on OR workflow, we only stock medications during off-peak shifts.

Each day we run a refill report, a compare report to audit controlled substances use, a usage report to manage and adjust par levels, and we check for outdated medications and indicate those nearing expiration. We also run a discrepancy report once a month. It is worth noting that although most anesthesia users document their vended products accurately through the machine, there are instances when vended products are not keyed in resulting in inaccurate inventory counts. Thus, the report that would normally indicate how many individual drug products are needed to replenish each unit are generally of little use. Until this improves through better education, we bring enough to replenish all medications for each machine during stocking.

Conclusion

Pyxis Anesthesia brought much needed organization to medication management in the OR ensuring greater pharmacy control, which was the main goal of this project. We have found that our physicians greatly appreciate having these medications organized and easily accessible during procedures, and pharmacy now has a better overall rapport with OR staff. With an accurate, real-time view of drug utilization in the OR, we are better able to manage inventory costs, exert medication control, and curb possible drug diversion ■



Clare Taft, CPhT, has been a pharmacy technician at Sharp Memorial Hospital for 21 years and has served as the Pyxis System Specialist for the last 10 years.



Shannon John Johnson, PharmD, is the director of pharmacy for Sharp Memorial. His expertise is in improving health care and pharmacy information systems, medication management systems, and CPOE.

WHERE TO FIND IT

CareFusion Corporation
Visit www.pppmag.com/info
and click RSN 126