

# CODONICS INSIGHTS

## A Customer Perspective

Author: Gee Mathen

### Texas Children's Hospital Increased OR Safety and Compliance with Codonics Safe Label System and Omnicell's Anesthesia Workstation

**Medication use in the perioperative setting is of paramount importance.** In general, medication management in this setting is both challenging and essential, given the number of high-risk medications used, the variety of practitioners accessing these medications, and the vulnerable nature of surgical patients. The inclusion of children and young adults in this population means the potential for risk is even greater. It is with this in mind that the Texas Children's Hospital pharmacy department, in collaboration with anesthesia, nursing and surgical practitioners, evaluated and incorporated automation and standardized labeling technology in early 2013.

#### Automated Inventory and Compliant Labeling

Since then, Texas Children's Hospital has resolved several points of risk for medication safety with the introduction and implementation of automation. Automation provides the ability to standardize medication inventory, accountability, dispensing and preparation which all support safe practices. Omnicell's Anesthesia Workstation (AWS) and Codonics' Safe Labeling System (SLS) are now part of the operating room (OR), automating medication management, distribution and labeling.

During the lead up to implementation, we identified the most significant areas of risk, which included proper storage, preparation, and dispensing of high-risk medications in all perioperative areas. Each of these risk points were greatly improved with the hospital's new approach to labeling and barcode identification of all medications used in this area. With proper and consistent use of the AWS and the SLS, Texas

Children's Hospital has been able to increase safety and decrease risk in the OR.

#### Before Automation

Before the implementation of automation and technology, medications were provided to the perioperative areas via kits, trays, boxes and anesthesia fanny packs.



Texas Children's Hospital, Houston, Texas

*"The integration of Codonics SLS and Omnicell AWS systems has automated and standardized medication management within the complex OR environment to improve efficiency and increase patient safety."*

**Jeffrey L. Wagner, Pharm.D., MPH, RPh, BCPS**

Interim DOP  
Texas Children's Hospital



Codonics SLS works with Omnicell's Anesthesia Workstation to deliver medication safety and accuracy

Perioperative medications are high risk drugs which elevated the hospital's concerns – anesthetics, anticoagulants, benzodiazepines, electrolytes, neuromuscular blockage agents, paralytics, sedatives and vasopressors. With the previous process, these high risk drugs were manually stocked in the kits, trays, boxes and fanny packs to be signed out to the OR personnel based on that day's surgical schedule.

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These processes constituted a point of risk. When Texas Children's combined the sensitivity of perioperative medications, with medication labeling and identification errors, coupled with the risk of diversion, the need for automated medication management in the OR became crystal clear.

Inside the OR, medication doses are often calculated and prepared in advance. Before the implementation of the Safe Label System and AWS, the medication labels would need to be handwritten and stored in drawers together with the medications. Because there were no automated processes in place to ensure labeling compliance, the risk for human error came into play especially with look-alike drugs. There were no safeguards to ensure syringes were appropriately labeled, that they were legible, and/or labeled at all. Additionally, medications that required further dilution could potentially be prepared incorrectly without standardized labels.

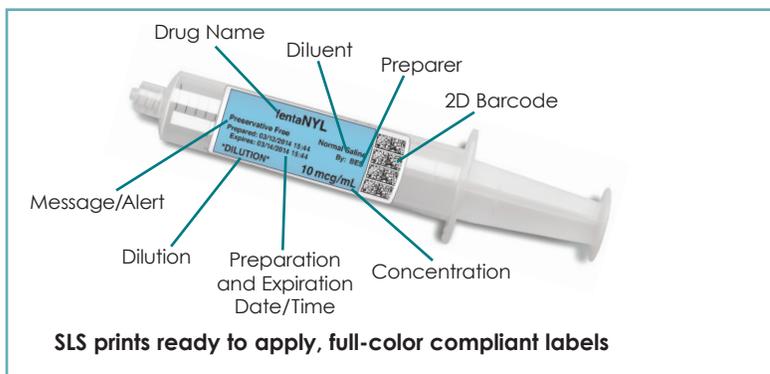
In an effort to improve medication safety, we focused on integrating a medication management system that would introduce compliancy into the OR. Coming together as a team, pharmacy met with anesthesiologists on the Anesthesia Quality Team and nursing for an evaluation of the technology on the market. We selected AWS and SLS because they met our safety and compliance criteria and integrated well together. SLS complies with The Joint Commission's National Patient Safety Goals for safe medication use and the American Society of Anesthesiologists (ASA) color guidelines.

SLS receives data imports from LexiComp's drug formulary service, which made configuration of our database very easy. We implemented both systems in our ORs at the same time. Because pharmacy is responsible for supporting both technologies, we designed a hands-on training program that would provide instruction to the range of practitioners who would interact with the automation, including anesthesiologists, nurses, pharmacists, physicians, and OR support personnel.

## Significant Improvements

Both the AWS and SLS have provided significant improvements in the OR medication workflow and addressed most, if not all of our points of risk. The increased availability of medications, streamlined paperwork process, and minimized workload were among the most important benefits of the technology. The high risk

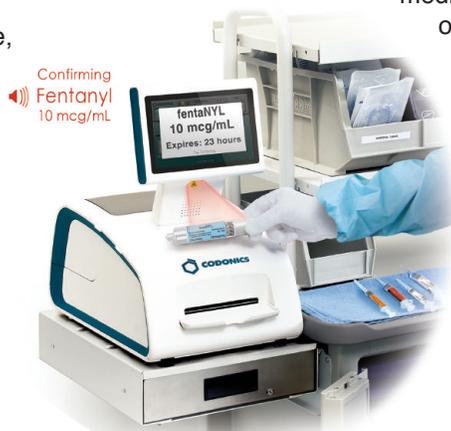
medications are now stored in the AWS, nurses and physicians are using personal logins to access the AWS, enabling tracking and accountability for medications. Pharmacy has control over usage, restock requirements and expiration tracking. Medication preparation has improved with labels that contain consistent naming conventions and concentrations, therefore, ensuring safe dilutions. Automated dispensing of the drugs in coordi-



nation with barcoding technology ensures that the correct medication is prepared and administered to the patient. Upon taking a drug out of the AWS, the nurses and physicians scan the vial using SLS and select a dilution (configured by Pharmacy) if appropriate. A compliant, standardized full-color label is generated with a barcode that can be integrated with an AIMS or EMR, and there no longer is a need for a manual process. Once the medication is prepared and labeled, the barcode on the SLS label enables a "triple check" prior to administration to the patient. This final electronic safety check provides a visual and audible confirmation of the medication in hand as well as displays the time remaining until the medication will expire.

Automation has not only provided solutions to our points of risk but also improved medication safety in the perioperative setting at Texas Children's Hospital. We are excited about the future incorporation of more technology to help us provide the best and safest level of care to our patients.

Gee Mathen, BS, is an assistant director of pharmacy for application and technical services at Texas Children's Hospital



Scanning the labeled medication prior to administering provides a "triple check" to ensure safety