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Codonics, RIVA Team Up for Safer Labeling

by Steve Frandzel

Hospital pharmacies that use the RIVA IV compounding robot can now add another potential deterrent to human errors that may slip into the pharmacy process.

The Codonics Safe Label System (SLS) has been configured for operation in conjunction with the RIVA robot (Intelligent Hospital [IH] Systems). It produces color-coded, bar-coded labels for anesthesia drugs headed to the operating room (OR) and ICU. The labels comply with Joint Commission requirements and American Society of Anesthesiologists (ASA) guidelines, according to Codonics and IH Systems.

Although most often used currently by anesthesia providers preparing anesthesia medications in the OR suite, the system can be used anywhere medications are prepared, the companies said, adding that the SLS costs about \$8,000 for a typical hospital installation.

RIVA produces syringes and IV medications in an aseptic environment and applies only black-and-white bar-coded labels. The SLS is capable of scanning those labels to produce color-coded labels. Pairing the two systems permits labeling for batch processing of prefilled anesthesia drugs and potentially reduces reliance on third-party drug preparation.

“A lot of safeties are already built into the RIVA process,” said Thom Doherty, the chief technology officer at IH Systems. “To then add a step that relies on a human to read and apply the right label adds another risk into the mix. The Codonics system takes away some of the potential for errors.”

“The main reason to look at this system is safety and compliance, for simplifying workflow, and as a way to save money. Purchasing commercially prepared prefills is convenient, but costly,” said Cristy Berg, the vice president of communications with Codonics.

The System in Practice

Mission Health in Asheville, N.C., had been outsourcing anesthesia syringes, according to lead pharmacist Eric Reitzel, RPh. Mission is the first facility to use the RIVA-compatible SLS add-on.

“The decision to make them in-house grew out of our requirement to enhance patient safety, which includes following the ASA guidelines for color-coding syringe labels,” he said.

Mr. Reitzel observed that incorporating the system into the pharmacy's RIVA workflow has been "seamless." During the production process, a pharmacy technician removes the syringes from the robot and scans the bar code of each syringe into the SLS, which provides a visual and audible confirmation of the drug name, concentration and other relevant information. It then prints a label, which the technician affixes to the syringe. As an added safety measure, Mission requires a pharmacist check of every SLS-labeled syringe. At Mission Health, the drugs most frequently labeled by the SLS include phenylephrine, succinylcholine, rocuronium, labetalol, atropine and neostigmine.

Ms. Berg stressed the importance of the color-coding component of the SLS. But she added that the system "goes beyond just adding color to the label. It includes multiple safety checks during drug preparation and administration when used in the OR, and acts as a double and triple safety check that ensures compliance with best practices and standards." The SLS, she added, spares clinicians the time-consuming—and potentially error prone—task of handwriting missing information on labels, because every label produced includes all of the elements necessary for Joint Commission compliance.

The ISMP's Take on Labeling and Color-Coding

Color-coding, however, is not without its critics, but the shots have been aimed at third-party commercial drug packagers. Writing in the journal *Pharmacy & Therapeutics* (2012;37:199), Matthew Grissinger, RPh, FASCP, director of error-reporting programs with the Institute for Safe Medical Practices (ISMP), said that several major medical associations "oppose color-coding for commercial drugs and have voiced concerns about over-relying on color-classification systems as the primary way to identify a drug and about bypassing the recommended three readings of the drug label." But the same concerns don't apply to individual anesthesia providers preparing individual doses. Mr. Grissinger continued: "When anesthesia providers prepare drugs in the OR, they retrieve the needed medication from a cart, read the vial or ampule label, draw up the medication and apply a color-coded adhesive label to the syringe. In most cases, only a single agent within each drug class is needed. Each drug has its own color, and anesthesia providers know what is in each syringe because they prepared it."

Prefilled syringes from an in-house robot fall somewhere in between those poles: In effect, RIVA serves as a production center, albeit one that can be tightly controlled and monitored by the hospital pharmacy. But Mr. Grissinger agreed that the same potential to mix up prefilled syringes might come into play if labels aren't carefully read. The ISMP recommends bar-code technology as one way to minimize the chance for confusion and misuse of color-coded syringes. Codonics noted that such technology is an integral part of the SLS.

"Anesthesia providers have been using a standardized color scheme for many years. It's well known in that community," Mr. Grissinger told *Pharmacy Practice News*. "Fortunately [they] use a relatively small variety of medications, so that color coding may work for them. The problem lies when color

coding goes outside that limited number of classes in anesthesia and is used for all medications throughout the hospitals, where every single type of drug or drug class could be [involved].”