Process Improvement Case Study:
The Impact of the Intelliguard® Kit and Tray Management System on Medication Kit Checking Efficiency and Accuracy

The Problem
Control of medications in the hospital is the job of the pharmacy. Continuous review of all areas where medications are stocked, as well as the efficiency and accuracy of floor stock medications is an important ongoing process. Organizationally, Rady Children’s Hospital had a specific challenge to take control of medications used by the anesthesiologists.

Background
Rady Children’s Hospital needed to:
- Provide an efficient method to replenish hundreds of medication kits and trays
- Improve accuracy of the replenishment process including PAR levels and expiration date checking
- And most importantly: improve control of medications used by anesthesiologists.

Three potential solutions:
1. A pharmacy satellite in the OR, requiring considerable construction costs and disruption, and still use manual replenishment processes.
2. Add automated dispensing machines at an estimated cost exceeding $1 million and still using pharmacy staff time and manual processes to prepare and load daily.
3. Add RFID automation for kit and tray replenishment in the central pharmacy.

The Solution
The conclusion was RFID automation would provide the control, accuracy and efficiency needed with the least expense. The Intelliguard® Kit and Tray Management System was selected and more than 17,000 medications in approximately 200 kits, trays, bags and packs were converted to automated RFID replenishment.

Process Improvement Results
Average Time Savings in Minutes by Tray Type
The study conducted confirmed manual processing of a large anesthesia tray can take 30+ minutes. Using RFID, Rady Children’s Hospital observed time savings from 3 to more than 18 minutes per tray, with an average time savings of approximately 15 minutes per tray. when using the RFID system.

Quality Improvement Results
The study also measured accuracy and concluded it was indeed a problem with the manual process—trays were not being filled to specification. Results of the study showed that in all cases, zero errors were recorded when using the RFID system.

Conclusion
Rady Children’s Hospital was able to increase staff efficiency and accuracy in restocking and distribution of kits and trays as well as in monitoring expiration dates and recalled medications. The primary reason Rady Children’s Hospital began this process was quality improvement by limiting access to medications by non-pharmacy personnel. Control of medications used by anesthesiologists is now professionally managed by pharmacy personnel. Most importantly, patient safety is enhanced through a decrease in human error by automating error-prone manual tasks and assuring critical steps are not missed in the replenishment process.