

# Bar-Code Initiative For The NICU ADC

## The Problem

Instances were identified where medications were incorrectly restocked in the NICU automated dispensing cabinet (ADC), the Omnicell. This was determined to be due to confusion caused by “look-alike” packaging of different drugs as well as different strengths of the same drug, combined with confirmation bias of staff stocking and retrieving medications from the ADC.

## Aim/Goal

To assess, and if feasible, enable bar-code technology within the ADC, thus reducing the likelihood of occurrences of preventable harm.

## The Team

- Gregory Dumas, RPh, NICU Clinical Pharmacist
- Munish Gupta, MD, Neonatology
- David Mangan, Pharm D., Clinical Pharmacy Supervisor
- Stephen Maynard, CPht, Pharmacy Supervisor
- Francis Mitrano, MS, RPh, Director, Pharmacy
- DeWayne Pursley, MD, Chief of Neonatology
- Jane Smallcomb, RN, NICU Nurse Manager
- Karen Smethers, Pharm D., BCOP, Clinical Pharmacy Coordinator, Medication Safety
- Susan Young, RN, NICU Clinical Nurse Specialist

## The Interventions

- Nine high-risk medications and IV fluids with narrow therapeutic index were chosen for initial intervention.
- Unit-of-use packaging with bar-codes were created for those medications and fluids without existing manufacturer’s bar-codes.
- Readability of all of the bar-codes was assessed and corrected.
- Bar-coding functionality was implemented within the ADC, requiring scan of bar-code on placement of package into ADC by pharmacy staff and on removal of package from ADC by NICU staff.
- Pharmacy and NICU staff were provided in-service training prior to implementation of the new system.



## Lessons Learned

- Using our own technology, unit-of-use packages can be labeled with bar-codes that can be recognized by an ADC scanner.
- The same system can be used to recognize manufacturer’s bar-codes.
- After highlighting the previous errors, the new system was readily adopted by pharmacy and NICU staff.
- Since the bar-code scanning has begun, a major potential error was averted when an incorrect medication was detected upon scanning at ADC removal.



Bar code scanner

## Next Steps

We are developing systems to monitor compliance with bar-code scanning at medication refill and removal. We also plan on further developing the labeling system and workflow design to allow for bar-coding of all the medications stored in the NICU ADC.