

Abstract

Background: Automated dispensing systems or cabinets (ADS or ADCs) have provided hospitals the ability to provide computer-controlled storage, dispensing, and tracking of medications in a decentralized approach by residing directly on the medical units at the patient point of care. Despite their widespread use, use of ADCs may pose shortcomings when it comes to efficient medication delivery. The objective of this project is to optimize the inventory residing in the Pyxis ADCs at Alton Memorial Hospital as well as developing a standard procedure for the pharmacy staff to follow when loading a new medication into an ADC

Methods/Solution: Seven ADCs were selected for optimization which included units from three general medical units, surgical care unit, and the intensive care unit. Key performance indicators of stock out (%) and vend/refill ratio were utilized to guide optimization performance.

Outcomes: Improvements in vend/refill ratio were seen in 4 of the 7 ADCs that were optimized when comparing between quarter 3 of 2021 (before the optimization period) and quarter 1 of 2022 (following the optimization period). Stock out (%) saw improvement, meeting goal at 1.2% for the month of February 2022 compared to 1.5% for the month prior to optimization.

Evaluation: In order for the highest level of efficiency, proper optimization of ADC inventory is critical. This project set an appropriate baseline for the ADC optimization efforts at Alton Memorial Hospital. In the future, an annual complete inventory optimization, optimization of other cabinets that were not included previously, and minor optimizations as seen fit should be employed to increase workflow efficiency further.