

# Saving \$1 million a year by killing a robot and reducing pharmacy inventory by over 60%

Using a lean Industrial Engineering approach to improve medication delivery and reduce waste.

## THE CHALLENGE

Carolinas Health System's (CHS) pharmacy was experiencing some challenges in their medication delivery to clinical staff and patients. They were using a pharmacy robot, which required a 15-hour lead time and medication was delivered in one batch each day. This lag resulted in missing routine medication, returns due to discharged patients or med changes, and a high volume of med stat requests from nursing staff because medication was not available when needed. The organization decided to apply a lean industrial engineering approach to solve this supply chain issue.

## THE PROCESS

Boulder Associates' Mike Oswald, then a CHS lean leader, took on the challenge by analyzing the pharmacy's operations using a value stream mapping process, where current and ideal states were identified. Then, using A3 problem solving, implemented a one-piece flow with joint huddle metrics to deliver a solution that not only resolved the existing issues, but also delivered some additional unexpected bonuses.

The lean team's solution centered around two main ideas:

- Implementing multiple four hour delivery cycles per day, instead of the 15-hour, one batch a day process. This significantly addressed the issues with missing medication, reduced the return rate, and volume of med stat requests. It also expedited returns to the pharmacy as they were picked up on the four-hour cycle as well.
- Implementing a manual picking process, where pharmacy staff custom picked each patient order as it arrived. Not only did this prove more efficient, it could also be done in a space that took up only 20% of the footprint of the pharmacy robot.

## THE OUTCOME

Not only did the lean solutions solve the initial issues the pharmacy faced, these operational improvements allowed the facility to remove the existing robot, which **saved more than \$1 million per year in maintenance costs and freed up 800 s.f. of space for future growth**. In addition, further improvement activities reduced inventory by 63%, which in turn freed up FTE from managing excess inventory. This allowed the facility to activate a number of programs related to medication education and counselling that were previously not able to be staffed.

### OPERATIONAL EXCELLENCE AT BOULDER ASSOCIATES

Operational Excellence is a catalyst for improvement and innovation.

Our expertise comes from more than two decades of using process-driven design to deliver healthcare facilities. In that time, the ideas of optimizing flow, reducing inefficiencies, and operational assessments have informed the design services we provided. From our years of full engagement with the concept of lean, we have now established Boulder Associates Operational Excellence as a consultancy that provides a range of services from training to assessments to custom data visualizations to clients in various sectors worldwide.

We believe that being a lean organization is an advantage in the marketplace. We teach lean, but we also act lean. When we provide coaching, we anchor our work in the real world solutions that have benefited us in our design practice. While we are quite comfortable working with our clients at a strategic level, we are at our best when we join our clients and team members in the trenches, rolling up our sleeves and collaborating on tactical solutions that add value.

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