

ABOUT THE AWARD FOR EXCELLENCE IN MEDICATION SAFETY

The Award for Excellence in Medication Safety is a nationally acclaimed awards program that recognizes outstanding pharmacist leadership, teamwork, innovation, and patient outcomes that demonstrate improvements in patient safety within a medication-use system in acute and ambulatory care settings. For over a decade, the award has been a collaboration between the ASHP Foundation and the Cardinal Health Foundation, to showcase the critical value and importance of pharmacist leadership in impacting the effective and safe use of medications on patient care and outcomes.

2017 FINALIST

VA ANN ARBOR HEALTHCARE SYSTEM ANN ARBOR, MICHIGAN

ACCURACY AND EVERY SECOND COUNTS: CODE CART MEDICINE TRAY REDESIGN

An initiative to redesign the medicine tray used in code carts enhanced patient safety through improved accuracy of medication retrieval and increased medication label readability while decreasing retrieval time.

Overview of Organization

Since 1953, VA Ann Arbor Healthcare System (VAAHS) has provided state-of-the-art healthcare services to the men and women who have so proudly served our nation. More than 68,000 veterans living in Southeast Michigan and Northwest Ohio visited VAAHS for their comprehensive healthcare needs, and they completed 850,000 encounters in fiscal year 2016. The main hospital campus located in Ann Arbor serves as a referral center for specialty care.

Interprofessional Team

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PROJECT SUMMARY

Importance

Accuracy and every second counts when the team is responding to a patient for a code. The care of patients in these life-and-death situations is dependent upon split-second decisions relating to the selection and preparation of medications available in an emergency tray or cart. Most of the medications in a code cart are high-alert medications, so accidental misuse is more likely to result in patient-related harm. VAAAHS is a tertiary referral center with a large number of carts, touching every clinical area. However, the infrequent use of the code carts in some areas such as ambulatory care and low acuity inpatient units makes ease of use critical.

Background

Knowing that human factors play a significant role in choices healthcare workers make in a code situation, the VAAAHS focused on improving the functionality of their medication tray in the code cart selection and preparation of medications. The rationale for the project centered on the design-based concern that the use of auxiliary labels in code cart trays would decrease the likelihood that staff would read the label on the actual drug container, thereby increasing the likelihood of a wrong drug event.

Actions

The Pharmacy Chief conceptualized the improvement idea based on the human factor concepts from the food industry, and together with the medication safety officer, engaged a team that included system redesign staff, industrial engineering students, nurses, pharmacy technicians, and a local (medical tray) vendor on a multi-step process to redesign the medicine tray insert. The multidisciplinary team worked closely with the vendor to produce prototypes and with input from users, a final prototype was selected for extensive testing. Results of the testing demonstrated marked improvement of the accuracy of drug selection with the redesigned system. Selection errors were tracked through the process, and all but one type of error was eliminated upon multiple test scenarios, while also demonstrating that retrieval time was faster and the percentage of time the vial labels were read increased.

Objectives

- Increase safety of medication-use processes.
- Positive impact on staff.

Results

| Safety of Medication-Use Processes | Impact on Staff |
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| <ul style="list-style-type: none">• Enabled standardization across the VA system.• Increased accuracy of drug selection.• Decreased retrieval time.• Enhanced flexibility to substitute different size products in case of shortages. | <ul style="list-style-type: none">• Reduced chances of error due to human factors in selection.• Increased staff satisfaction.• More efficient restocking process.• Decreased workload due to consolidating tray designs. |

Initiative Continuation

Code carts throughout all VAAAHS care settings have been updated with the re-engineered trays. Two months after implementation, the team retested the pilot scenarios and found that selection errors were reduced or eliminated using the new system. The VA Ann Arbor's innovative initiative demonstrated the value of expanding the multidisciplinary team by including engineers and product vendors in healthcare quality improvement initiatives and led to an improved code medication tray insert that has now been implemented in hundreds of organizations both in the United States and internationally.