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Title: Optimizing automation and workflow design using an operational mission and vision statement

Purpose: The purpose of this project is to optimize inpatient pharmacy operations at a large nonprofit hospital using an operational vision statement to guide changes. This project will also evaluate the impact of these changes.

Methods: This single-center study evaluates changes in two areas of inpatient pharmacy operations. Modifications were made in the intravenous (IV) fill times and the management of automated dispensing cabinet (ADC) medications that have reached zero stock (stockouts) or a critically low threshold (critical lows). The intravenous (IV) are evaluated using percent of doses dispensed from the central pharmacy but not administered and the percent of administrations within a two hour window of time due. The optimization of ADC stockouts and critical lows through technician oversight is evaluated using the number of stockouts and number of critical lows over the defined time periods.

All relevant hospital data within the observed time periods is included. Outpatient areas served by floorstock is excluded.

Results:

The percent of doses dispensed but not administered prior to the change in IV fill times was 23.5% (1960 doses not administered out of 8330). The percent of doses administered within a two hour window of time due prior to the change was 80% (4945 out of 6242). After the change in IV fill times, the percent of doses dispensed but not administered was 20% (1707 out of 8370). And the percent of doses administered within a two hour window of time due was 81% (5358 out of 6599).

Prior to the ADC optimization, the number of critical lows and stockouts at the pilot ADC were 630 and 59 respectively. Post ADC optimization, the number of critical lows and stockouts were 153 and 12 respectively.

Conclusions:

Changes to the IV fill times and the management of critical lows and stockouts guided by our operational philosophy showed improvement in our efficacy and modestly reduced waste.