Impact of Robotics on Patient Safety and Productivity

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Automation is recommended as one potential mechanism to improve efficiency and patient safety. It has been proven that automation enhances the efficiency of medication distribution and its capability to reduce medication errors, increase patient safety, streamline hospital pharmacy operations, and increase accuracy. In this project, Six sigma approaches are used to study the medication process before and after automation implementation.

Define

1. SIPOC

DMAIC Project Charter

Project Name: Impact of Robotics on Patient Safety and Streamlined Area

Team Leader and Black Belt: [Name & Position]

Team Members: [List Team Members]

Project Sponsor: [Name & Position]

Measurement Period: [Start Date] to [End Date]

2. DMAIC Project Charter

Analyze

1. Fish Bone Diagram/Cause & Effect

2. Prioritization of Xs: Control / Impact Matrix 2

3. Unit Dose Medication Flow Deployment Flowchart

Improve

1. Strategy for change: Automated Unit Dose Medication Deployment Flowchart

2. Measurement of improvement & Effects of changes

Sigma Level - After

3. TAT Comparison Before & After by Using Control Chart

Measure

1. Data Collection Plan Worksheet

2. Measurement Data Display

3. Sigma Level - Before

Control

1. Create User Guide

2. Downtime Procedure

3. Poster of Bag and Ring information

4. Escalation Procedure

Transforming of the Inpatient Area

Message for others:
(Recommendations & Sustainability plan)

DPO & Sigma before measurements:

- DPO over 4 days
- Sigma level for TAT > 2.56
- Sigma level for MEI = 4.86

DPO & Sigma after measurements:

- DPO reduced to 0
- Sigma level for TAT = 5.3
- Sigma level for MEI = 7.48

Six Sigma Net Income:

- 69% improvement of TAT
- 66% reduction of overtime due to automation
- 100% improvement of Medication Error.

Opportunities identified:

- Report any system error through Data report
- Higher administration evaluate new EHR
- Revise in training more staff
- Continuous Awareness of Nurse staff

Lessons learned:

- Continuous monitoring as a key performance indicator and timely information sharing among stakeholders are very critical to success of Medication Dispensing and Patient Safety.

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