CQO: The Future of Healthcare Supply Chain

Advanced Technologies for Automating the Supply Chain

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Objectives

- Understand current new technologies impacting supply chain
- Learn how those technologies are being applied in real life examples
- Spark cost saving ideas that you can implement when you get home

Technology Trends

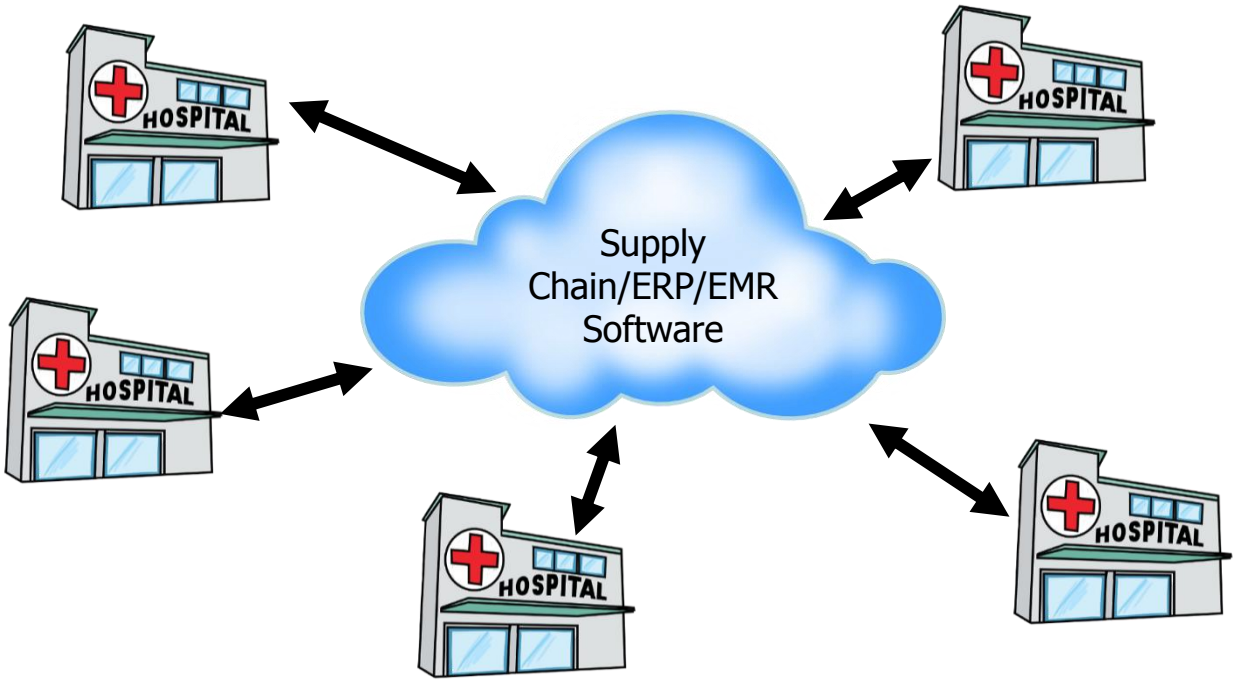
- Cloud Computing
- Big Data
- Smart Device Technology
- Kanban

Cloud Computing

Big Data

Big data is the term for a collection of data sets so large and complex that it becomes difficult to process using on-hand database management tools or traditional data processing applications.

Cost, Quality, Outcomes, Cloud & Big Data



Mobile Computing

Mobile Computing

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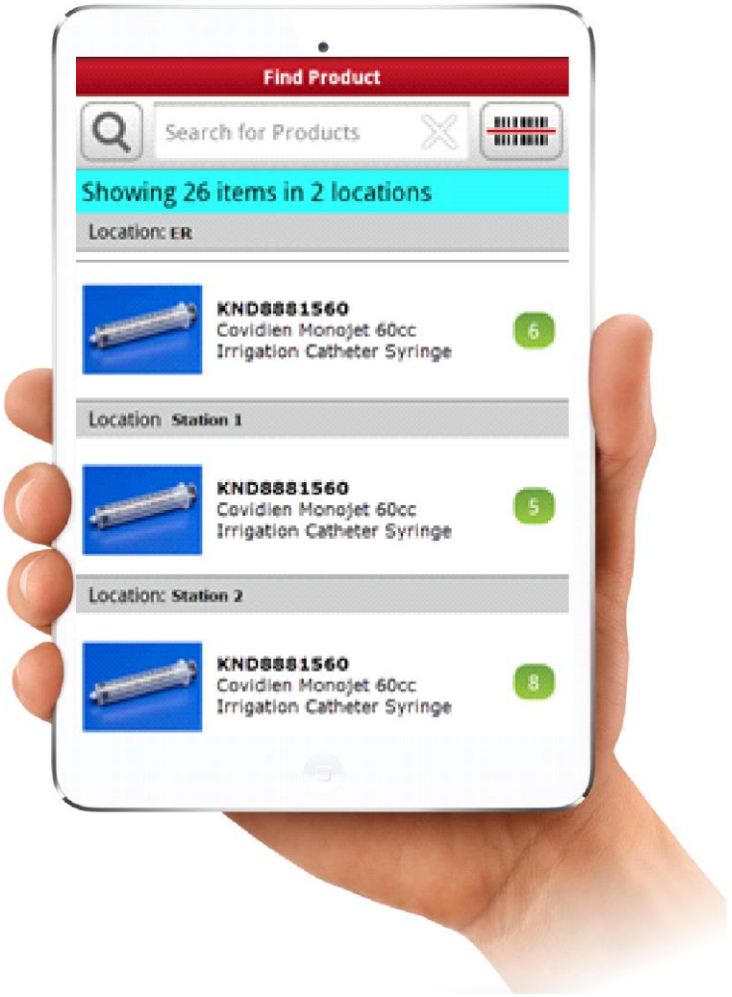
Mobile Computing



2-Bin Kanban

Case Study #1

Cloud Plus Mobile

About Agnesian Healthcare

- Founded in 1896 by Sisters of St. Agnes
- 3 hospitals
  - St. Agnes Hospital, 161 beds
  - Ripon Medical Center, 25 beds
  - Waupun Memorial Hospital, 25 beds

Inventory Challenges

- Lack of good data for making decisions
- Current system was cumbersome to use
- No IT support for new systems

Mobile Solution

- Impact to Implementation Time
  - Waupun facility up in 2 days
  - Cath Lab up in 1.5 hours with full UPC support
- Impact to IT
  - None
- Very high staff satisfaction

Report Settings

Location: ER

Vendor: John's Demo Company

Date Range: 09/18/2014 to: 09/25/2014

Reorder Type: Static ✗ | Dynamic ✓

Calculate by: Items Pulled from Inventory ✓ | Orders Received ✗

Recommend Par Levels

Showing 1 to 9 of 9 entries

Filter

First | Previous | 1 | Next | Last — Show 10 entries — Actions Select... — Columns

Product #	Custom Number	Location	Description	Total Units	Avg. Units per Day	Days of Supply	Days of Safety Stock	Current Par	Recommended Par
John's Demo Company									
AVE00166		ER	Glue Stic, Permanent, Washable, .26 oz., Clear	0	0.0	7	5	2	1
MCO0121309		ER	GLUE,SUPER,.18OZ	2	0.3	7	0	3	2
AVE68052		ER	Slant Ring View Binder, 1/2" Cap, 8-1/2"x11", White	0	0.0	7	0	3	1
AVE68056		ER	Locking D-Ring View Binder,1" Cap.,11"x8-1/2",White	0	0.0	7	0	6	1
AVE68060		ER	Locking D-Ring View Binder,1-1/2" Cap. 11"x8-1/2",White	1	0.1	7	0	19	1
ACC72020		ER	Binder Clips, Small, 3/4"W, 5/16" Capacity, Black/Silver	18	2.6	7	0	1	3
QUA37895		ER	Gummed Clasp Envelope, 28Lb, 10"x12", 100/BX, Kraft	26	3.3	7	1	26	26
ESS415313		ER	Hanging Folder, Legal, 1/3 Tab Cut, 25/BX, Green	0	0.0	7	0	1	1
SMD10230		ER	Interior Folders, 1/3 Ast. Tabs, Letter, 100/BX, Manila	2	0.3	7	0	6	2

First | Previous | 1 | Next | Last — Show 10 entries — Export Options: Excel CSV

60 Day Results

- Setting new PAR levels reduced inventory without stock-outs
- Emergency Room
  - 49% of inventory was inactive
  - Cut inventory dollars by 34%
- Med-Surg
  - 40% of inventory was inactive
  - Cut inventory dollars by 13%

Case Study #2

Introduction to 2-Bin KanBan

ED Pilot Project

PENNSTATE HERSHEY

Milton S. Hershey Medical Center

jump TECHNOLOGIES

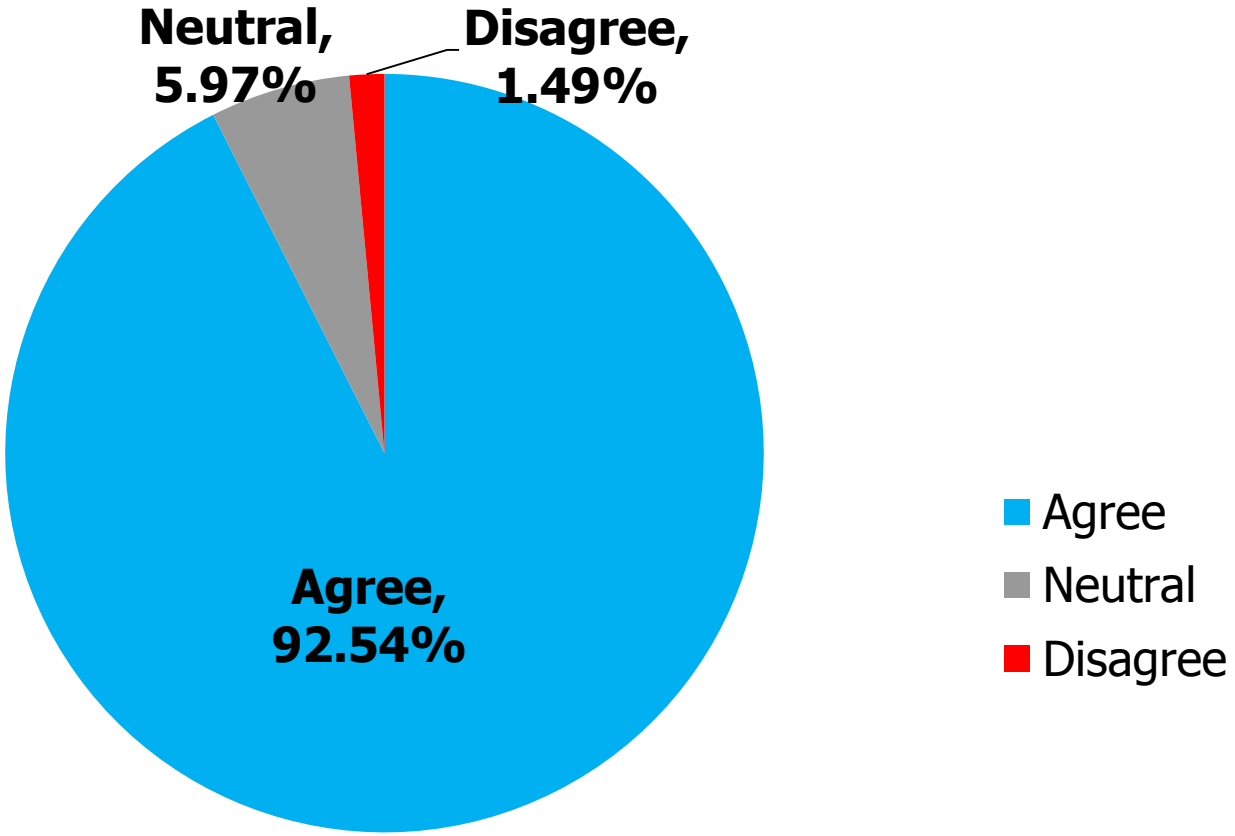
The Problem

- The department has evolved over time as far as how it is utilized as well as staffing mix
- The system of stocking has not changed to keep up with the department
- The department has grown significantly but storage space has not
- Lack of well stocked supplies leads to higher costs, more time and energy spent, and lower staff morale
- Highest RN turnover rate in the Medical Center

The Cost

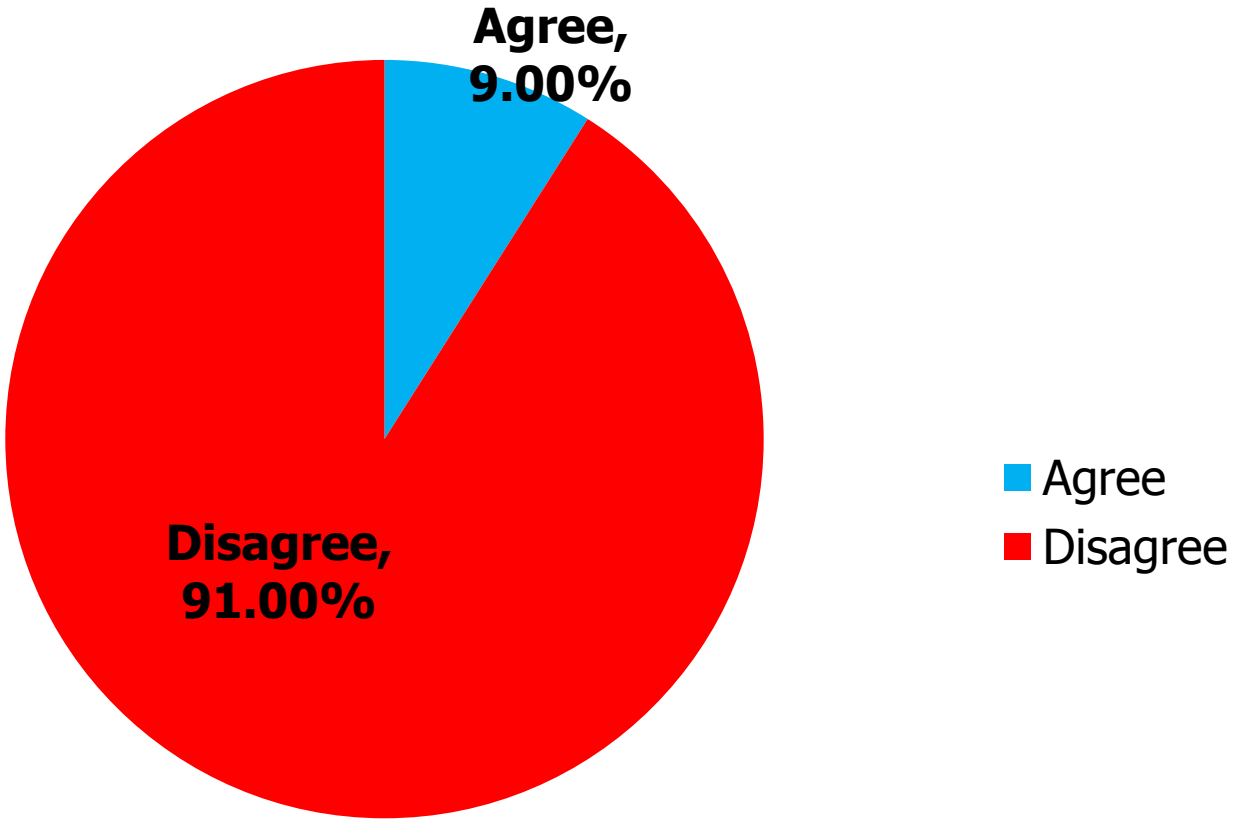
- Average 2hrs 14mins spent by nursing (per *12 hour shift)* stocking rooms and carts
- Approx. $353,000/year paying nurses and techs to stock
- 52 Pyxis machines in the ED
- $300,000/year equipment leases
- $70,000 in line charges in 1 year

RN Satisfaction Survey



The current stocking process NEGATIVELY affects *patient care*

S&D Satisfaction Survey



I am content with the current format of stocking the Pyxis machines in the ED

What we Did

Emergency Department Supply Chain Redesign

- Lean Six Sigma Kaizen Event - December 2012
- Pilot – February thru April 2013
- Team Included:
  - Nursing
  - Supply & Distribution
  - Administration
  - Black Belt Consultant

The Team

- Jeremy Kemp (Cardinal Health) – Black Belt
- Tim Armacost (Staff RN)
- Michele Nauman (Staff RN)
- Jenn Messenger (PCA)
- Nancy Savel (Clinical Head Nurse)
- John Hoelzle (S&D)
- Daniel Lyne (S&D)
- Matt Brennan (Director, Supply & Logistics)
- Phil Bentley Jr. (Pyxis Adminstrator)

The Solution

Results

- Decreased number of Pyxis machines
- Decreased line charges
- Decreased nursing and tech hours spent stocking
- Decrease clutter in rooms
- Improved efficiency of stocking process
- Increased nursing and tech satisfaction
- ***Improved patient care***

Kanban Types

WATERMARK

2 - BIN

Flexibility of 2-Bin Kanban

Mistake Proofing

4 Most Common Errors Solved by Kanban

1) Counting
2) Data entry
3) Decision making
4) Stock rotation

KeepItSimpleSolution

Simplifying the DATA

Item #	Custom #	Item Name	Location	Stock Outs	Scans	Scan Target	Avg. Units Day	Order Class	Current Reorder Qty
05606	2B1324X	IV 0.9%NACL 1000ML	EDX05	1	5	2	30.0	0SD	84
41434	2F7113	IRRIG WATER 500ML BAXTER	EDX05	0	5	2	1.4	0JIT	4
40581	306546	PREFILL 0.9%NACL 10ML FLUSH 10ML SYRINGE	EDX05	1	5	2	2.1	0JIT	6
40382	PZSVIVHMA	KIT ER IV START 155 PBDS	EDX05	0	4	2	21.7	0JIT	76
05923	309604	SYRINGE 10ML MLL B-D	EDX05	0	4	2	0.6	0JIT	2
06098	3068	CATHETER IV SAFT14G 1.25IN J&J	EDX05	1	4	2	2.9	0JIT	10
06535	982112	NEEDLE BFLY 21G.75IN W/FLL SAFT	EDX05	0	3	2	4.3	0JIT	20
39814	364880	BARREL ADAP FLL BLOOD COLL	EDX05	0	3	2	12.4	0JIT	58
39074	364902	BARREL ADAP MLL BLOOD COLL	EDX05	0	3	2	8.1	0JIT	38
05603	2B1322Q	IV 0.9%NACL 250ML	EDX05	0	2	2	0.9	0SD	6
06136	3065	CATHETER IV SAFT18G 1.25IN	EDX05	0	2	2	4.0	0JIT	28
06022	2420-0007	IV ADM ST 117IN 20D 2Y SMART CHECKVALVE MLL ALARIS	EDX05	0	2	2	16.6	0JIT	116
06747	K60	YANK SUCT FINE TIP	EDX05	0	2	2	1.1	0JIT	8
09604	367962	BLOOD COLL TB GNLT 4.5ML LI HE	EDX05	0	2	2	0.3	0JIT	2
05703	2F7124	IRRIG 0.9%NACL 1000ML	EDX05	0	2	2	1.1	0JIT	8
44907	383537	CATHETER IV SAFT 20G 1.25IN NEXIVA BD	EDX05	0	2	2	16.6	0JIT	116
06017	2B1307	IV 0.9%NACL DILUENT 100ML	EDX05	0	2	2	1.4	0JIT	10
05919	309657	SYRINGE 3ML MLL B-D	EDX05	0	2	2	0.3	0JIT	2
06147	3411	KIT CATH FEM STER SPEC	EDX05	0	2	2	0.9	0JIT	6
04828	1859	PULSE OXIMETER SENSOR ADL *	EDX05	1	2	2	1.7	0JIT	12
09605	367856	BLOOD COLL TB LV 3ML LIQ EDTA	EDX05	0	1	2	0.1	0JIT	2
04874	001206	MASK O2 AERO UNDER	EDX05	0	1	2	0.4	0JIT	6
05781	2478-0000	IV BLOOD ST 104IN 15D SMART *	EDX05	0	1	2	0.7	0JIT	10

Efficiencies Gained

- Fewer SKUs ordered on a daily basis
- Reduced touches by staff
- Eliminated cycle counts within PAR areas
- Eliminated data entry errors
- Reduced nursing time
- Reduced restocking time for staff
- Fewer stock-outs
- Improved nursing engagement

Observations: Talking with End Users

- Departmental staff removing bins to restock areas in their departments = No Re-Ordering
- Bins not placed on top shelf = No Re-Ordering
- Top shelf of each cart is for empty bins ONLY

Group Discussion & Questions

- What are your goals related to inventory management?
- Are you meeting them (as efficiently as you'd like?)
- What savings have you measured?
- What lessons have you learned?

Thank You

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