CSPD Case Cart Completion Project

MetroHealth Medical Center

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MetroHealth

Executive Summary

- The goal of this project to provide the operating room with accurate case carts for the procedures they requested.
- The OR staff, including surgeons and nurses will benefit from accurate case carts
- Successful completion of the project will decrease delays in OR start times and improve patient safety.

Project Charter

PROJECT INFORMATION	
PROJECT TITLE:	CASE CART COMPLETION PROJECT
BUSINESS UNIT:	CSPD
DATE:	2/26/2015

PROJECT DEFINITION

Business Case:

- Several gaps have been identified in the current process for case cart completion. Areas of opportunity include decreasing redundancy of work flow and improving accuracy thus ultimately improving patient safety.

Objectives (Primary Metric with Goal and Secondary Metric):

- Primary- Defect monitoring- completed case cart survey forms that had missing soft goods or top off items
- Secondary- Labor cost for assembling completed case carts cannot increase

TEAM MEMBERS		
CHAMPION:	Cheryl Jakovcic RN	
LEADER:	Terri Savage RN	
FACILITATOR:	Shelly Belak	
RECORDER:	Gigi Hubbard RN	
CROSS FUNCTIONAL MEMBERS:	Ella Gjerazi (SSS)	
	Wilonia Bradford (CSPD)	

PROJECT BOUNDARIES & SCOPE

Boundaries – Start with a clean empty case cart, and finish when the completed case cart is wheeled into the OR for use.

In Scope – CSPD and SSS staff compiling the case cart based on the established lists generated on the pick sheets

Out of Scope – Items that might contain bioburden or inaccurate instruments.
Trays are sealed and closed, this project is not responsible for the content of the trays

Operational Definition -
Numerator - # defect carts
Denominator – Total # of OR cases per day

ANTICIPATED RESOURCE S REQUIRED

AUDIT tools – time to monitor
Time for group to meet to work on project – group are in salaried positions.
Time for data collection from OR/SSS staff – include in their job responsibilities.
Time for implementing change process – for 2 (8hr) shifts for 2 CSP/SSS staff @ avg $17/hour = $544
2 (8hr) shifts for Mgr @ $35/hr = $560

TOTAL - $1104

EXPECTED DURATION AN D TIME LINE

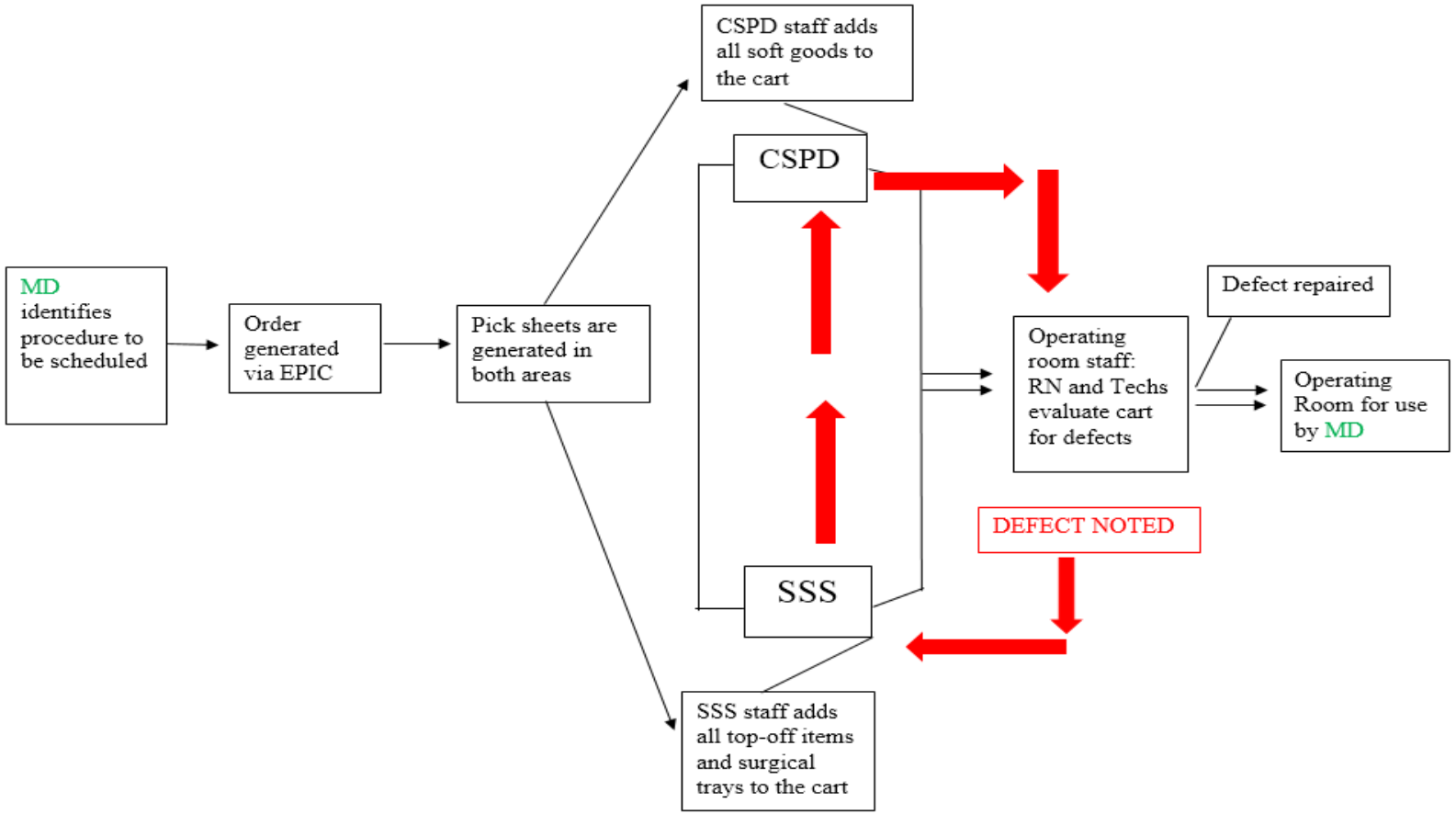
Green sheets (defects) Tray Quality surveys are already being generated.
March: Anticipate time needed to generate report, metrics from data already processed
Interventions: May
Final Completion Report – June 30, 2015

CTQ - CTP

Voice of the Customer - Critical to Quality (CTQ)			
Voice of Customer	**Customer Issues**	**Critical Customer Requirements**	**CTQs**
"I want everything listed on the pick sheet to be on the case cart"	Need the items to complete the OR, lose time fetching missing items	Everything must be there when I need it	Percent of case carts that do not have all of the soft goods and top off items

Voice of the Business - Critical to Process (CTP)			
Voice of the Business	**Business Issues**	**Critical Business Requirements**	**CTPs**
Labor cost for putting case carts should not increase	How many work hours are devoted to case cart assembly?	No added FTE to this process	This should be able to be fixed without additional full time employees (FTE)

Relationship Map



Current state process map

This initial process flow map was used to evaluate the entire scope of the case cart process. Based on data collected from the customer surveys, a FMEA was completed. The scope was narrowed to the process that is in the red framed area.

MUDA Walk Form

Type of Waste	Observations	Means to Eliminate Source of Waste or Obstacle to Eliminating Waste	Savings / Benefit from Eliminating the Waste
Transportation	No issue for building case carts	None at this time	None at this time
Inventory	• Many items with multiple errors in location. • Bins are not clearly labeled • New products not updated on sheets • Items move location based on space availability then are not changed on sheets	• Complete inventory of current items with location and product name changes documented • Rearrange stock for more efficient usage based on frequency of use	• Reduction of defects • Increased customer satisfaction • Designated areas allow for faster assessment of par levels
Motion	• Repeated trips around the warehouse area for each cart • Largest items furthest away from central picking area	• Rearrange stock for more efficient usage based on frequency of use • Move larger items closer to central picking area	• Less movement used to compile carts • Less time running to areas multiple time
Under-used intellectual assets	• Employees unable to do double checks because names of items on pick sheets don't match names on actual items	• Complete inventory of current items with location and product name changes documented	• Accurate product name will provide a 'double-check' mechanism for accuracy
Waiting	No issue for building case carts	None at this time	None at this time
Overproduction or excess capacity	No issue for building case carts	None at this time	None at this time
Over processing	• Case carts are often duplicated or not needed due to cancelled cases	• PARKING LOT	• PARKING LOT
Defects	• Pick sheets have inaccurate information	• Inventory current locations and update spreadsheets that feed database for locations	• Reduction of defects

Measurement System Analysis

- The case cart must be ready and have all of the requested items present, this is paramount for the customer (OR).
- The Case cart survey form covers all of the areas that contribute to achieve 100% case cart completion.
- The carts are either 100% complete and accurate, or they are considered defective
- Trained OR staff, that specializes in the procedures requesting the items are responsible for evaluating the carts based on the pick sheets.
- If anything listed on the pick sheets is missing or wrong, the entire cart is deemed defective.
- It is a PASS/FAIL option, there is no judgment call or reason to question accuracy or bias on the part of the inspector.

Project Description

- The key questions for the primary metric that we are asking are:
  1. What are the majority of defects?
  2. Of those defects, at what point during the assembly of the case carts did the defects occur?

To answer this question, we developed an audit tool to be filled out by the OR nurses.

- The key question for the secondary metric is:
  1. How much time is put into the assembly of each case cart?

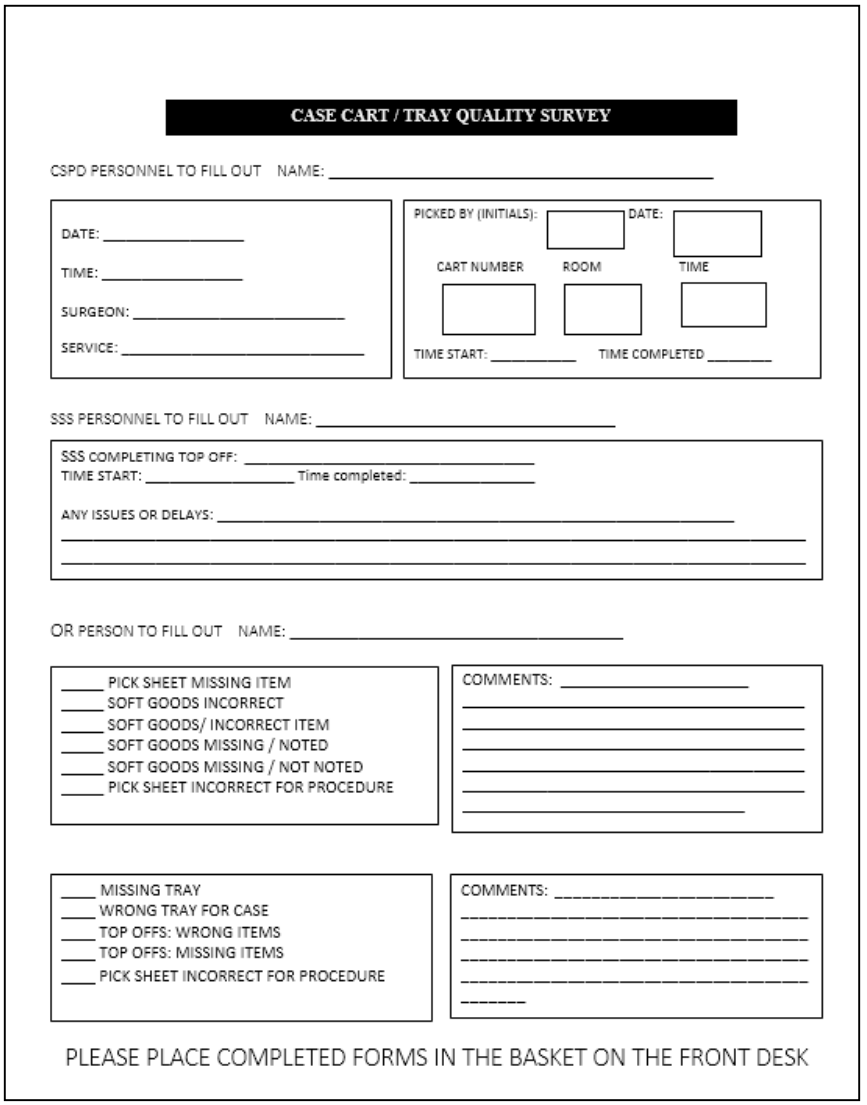
To answer this question, the audit tool also included an area for the SSS and CSPD staff to document the ‘start and stop’ times they assembled each cart.

Data collection plan

Define What to Measure			Define How to Measure			Who will Do it?	Sample Plan			
Measure	**Type of Measure**	**Operational Definition**	**Measurement or Test Method**	**Data Tags Needed to Stratify the Data**	**Data Collection Method**	**Person(s) Assigned**	**What?**	**Where?**	**When?**	**How Many?**
Name of parameter or condition to be measured	X or Y continuous or discrete data, product or process data	Clear definition of the measurement defined in such a way as to achieve repeatable results from multiple observers	Visual inspection or automated test? Test instruments are defined. Procedures for data collection are defined.	Data tags are defined for the measure. Such as: time, date, location, tester, line, customer, buyer, operator, etc.	Manual? Spreadsheet? Computer based? etc.	State who has the responsibility?	What measure is being collected	Location for data collection	How often the data is collected	The number of data points collected per sample
Random Case Cart defects	continuous data, product	Number of defective carts including any missing trays, soft goods, peel packs, or top off items	Visual inspection of cart for items listed on pick sheet. Performed by OR nurses prior to case	Stratified selection of 1st case carts on Tuesdays and Wednesdays for 4 weeks	Manual survey, Spreadsheet	OR nurse in each room for data. Ella or Gigi or designee to collect completed forms	# of defective carts over total # of carts inspected	OR room	Tuesdays & Wednesdays after 1st OR cases of the day completed.	First cases of the day - max 20 day, 2 days a week for 4 weeks

Operational definitions:

- CSPD: Central Sterile Processing Department
- SSS: Surgical Support Specialist
- Case cart: Enclosed metal portable cart used to place all required items on for an OR procedure.
- Pick Sheet: List of all items needed for each procedure. List is generated from Epic, based on physician requirements.
- Soft goods: All items used for a specific procedure that the CSPD staff places on the case cart.
- Trays: Sterile processed trays that contain surgical instruments required for a procedure
- Soft goods: All items used for a specific procedure that the SSS staff places on the cart.



CASE CART / TRAY QUALITY SURVEY

CSPD PERSONNEL TO FILL OUT NAME: _____

DATE: _____

TIME: _____

SURGEON: _____

SERVICE: _____

PICKED BY (INITIALS): _____ DATE: _____

CART NUMBER _____ ROOM _____ TIME _____

TIME START: _____ TIME COMPLETED _____

SSS PERSONNEL TO FILL OUT NAME: _____

SSS COMPLETING TOP OFF: _____

TIME START: _____ Time completed: _____

ANY ISSUES OR DELAYS: _____

_____

_____

OR PERSON TO FILL OUT NAME: _____

____ PICK SHEET MISSING ITEM
____ SOFT GOODS INCORRECT
____ SOFT GOODS/ INCORRECT ITEM
____ SOFT GOODS MISSING / NOTED
____ SOFT GOODS MISSING / NOT NOTED
____ PICK SHEET INCORRECT FOR PROCEDURE

COMMENTS: _____

____ MISSING TRAY
____ WRONG TRAY FOR CASE
____ TOP OFFS: WRONG ITEMS
____ TOP OFFS: MISSING ITEMS
____ PICK SHEET INCORRECT FOR PROCEDURE

COMMENTS: _____

PLEASE PLACE COMPLETED FORMS IN THE BASKET ON THE FRONT DESK

Measure Phase summary

- During the measurement phase we were able to develop a survey tool that standardized the inspection of the carts.
- By using a standardized form, there is minimal room for discrepancies in inspection.
- The surveys contain detailed options to chose from that will identify specific areas for improvement.
- Data collected will influence to scope of this project.

Analyze Phase introduction slide

- QUESTION: At which point are the case cart defects happening? To answer this, the team grouped the gathered data into one of two areas of production.

    1. Any soft goods defects will be entered as CSPD defects.
    2. Any top off item defects will be entered as SSS defects.

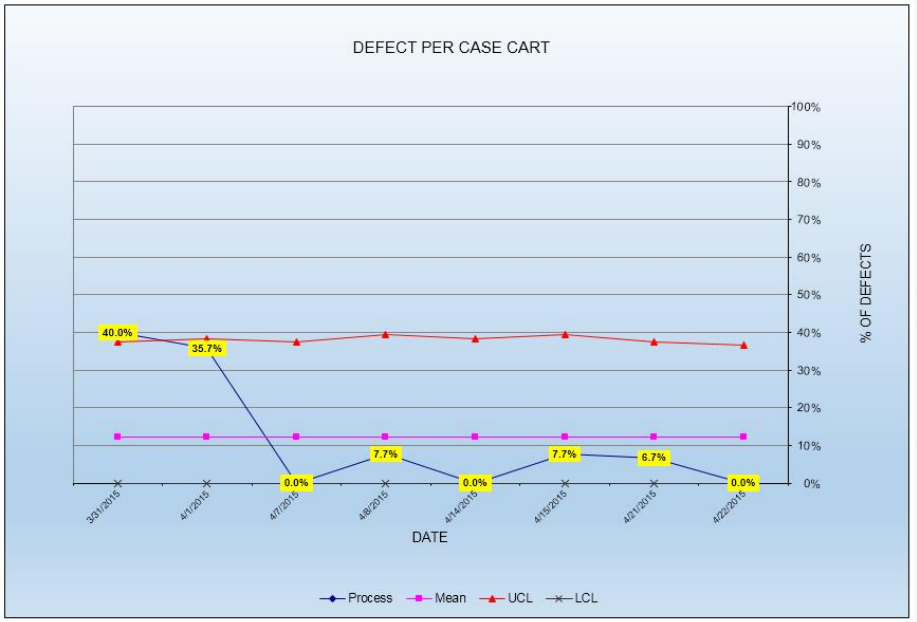
- The key opportunities for improvement will be with the area that has the most defects.

Analyze Phase

	# defects	# observations	Sigma			Process	Mean	UCL	LCL
3/31/15	6	15	0.08443		3/31/15	0.40	0.12	0.38	0.00
4/1/15	5	14	0.08739		4/1/15	0.36	0.12	0.38	0.00
4/7/15	0	15	0.08443		4/7/15	0.00	0.12	0.38	0.00
4/8/15	1	13	0.09069		4/8/15	0.08	0.12	0.39	0.00
4/14/15	0	14	0.08739		4/14/15	0.00	0.12	0.38	0.00
4/15/15	1	13	0.09069		4/15/15	0.08	0.12	0.39	0.00
4/21/15	1	15	0.08443		4/21/15	0.07	0.12	0.38	0.00
4/22/15	0	16	0.08175		4/22/15	0.00	0.12	0.37	0.00

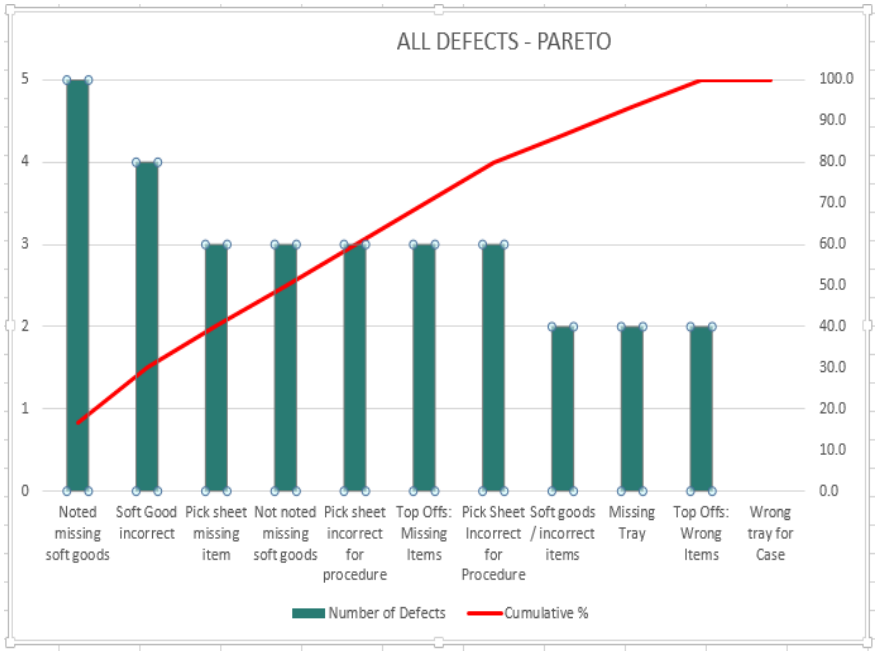
This chart demonstrates the %of defects per case cart, on the observed day that can be directly attributed to CSPD error.

The Upper Control Limit UCL is as high as 40%
The Lower Control Limit LCL is 0% - No errors.
The average, or mean, is 12%.



Baseline performance data
Primary metric

DEFECT	Number of Defects	Cumulative Defects	Cumulative %
Noted missing soft goods	5	5	16.7
Soft Good incorrect	4	9	30.0
Pick sheet missing item	3	12	40.0
Not noted missing soft goods	3	15	50.0
Pick sheet incorrect for procedure	3	18	60.0
Top Offs: Missing Items	3	21	70.0
Pick Sheet Incorrect for Procedure	3	24	80.0
Soft goods / incorrect items	2	26	86.7
Missing Tray	2	28	93.3
Top Offs: Wrong Items	2	30	100.0
Wrong tray for Case	0	30	100.0

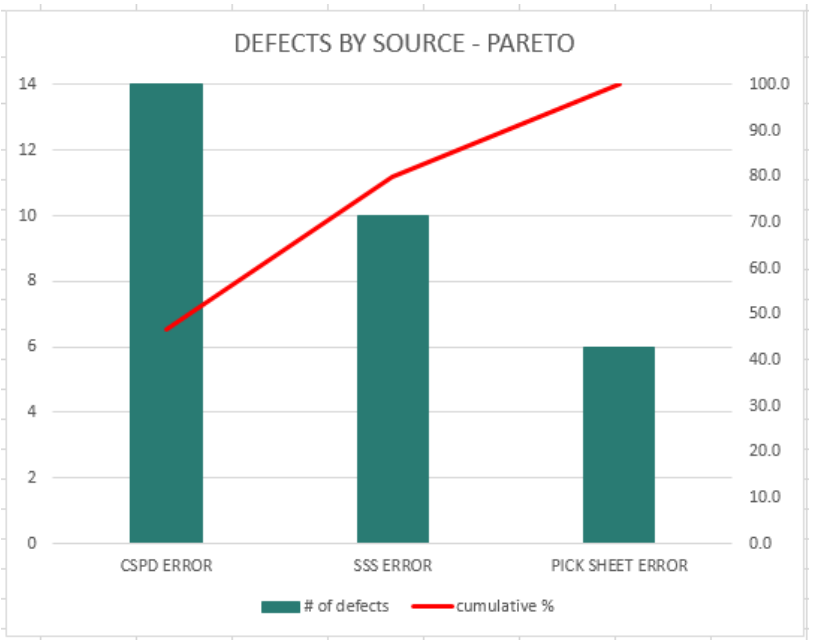


Projected observations: 160
Actual observations: 115 (Due to cancellations and scheduling)

The initial pareto chart showed that missing or incorrect soft goods were responsible for the majority of defective carts. At this point, the team was alerted to focus on the soft goods component of the case carts.

Baseline performance data
Primary metric

Defect	# of defects	cumulative defects	cumulative %
CSPD ERROR	14	14	46.7
SSS ERROR	10	24	80
PICK SHEET ERROR	6	30	100



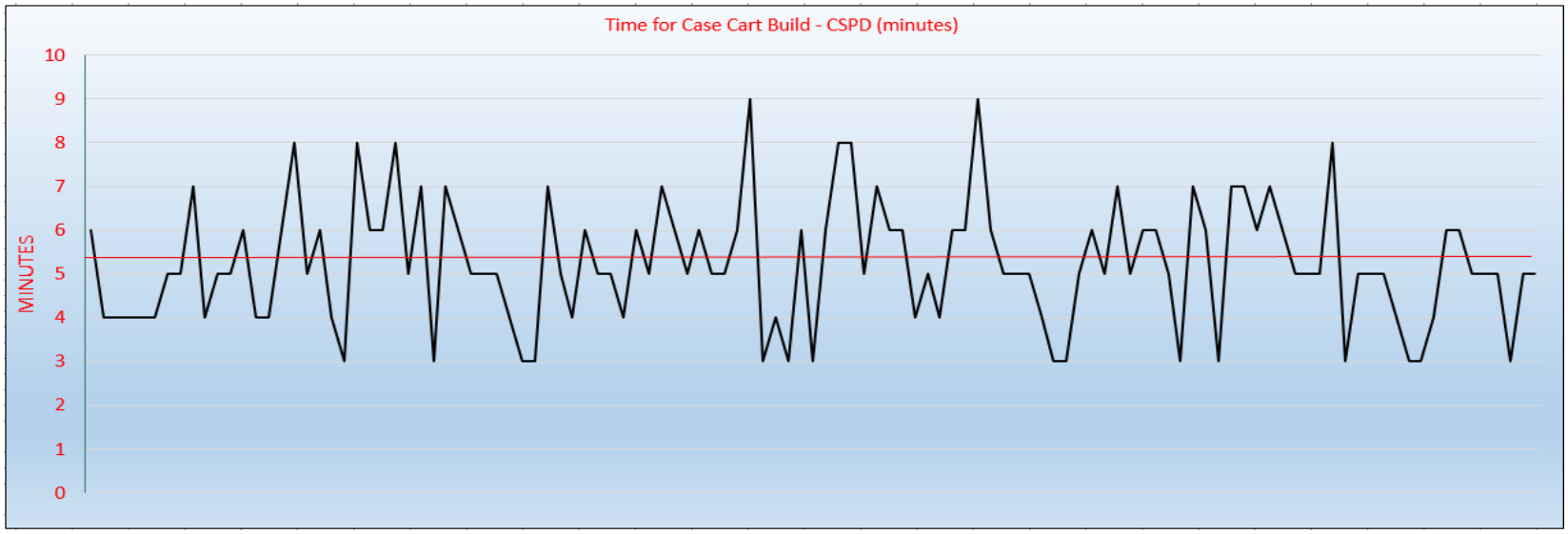
Projected observations: 160
Actual observations: 115 (Due to cancellations and scheduling)

CSPD DEFECT RATE: 12% SSS DEFECT RATE: 9% PICK SHEET DEFECT: 5%

Evaluation of the second pareto chart confirmed the CSPD component was the biggest contributing factor in the defective case carts. From this information, the team was able to focus their attention on the staff concerns and storage area they worked in.

Baseline data
Secondary metric

An important part of this plan was to ensure that there is no additional financial requirement. To monitor this, we will compare the baseline data with the post intervention data. The average time spent assembling case carts should not increase.



Based on the data above, the average time spent on case cart assembly by CSPD person was 5.23 minutes per cart. With the average FTE making $16.90 per hour, this amounts to $1.47 per cart.

Going to Gemba

- A trip to the actual site where the case carts are assembled.
- While there, the team spoke directly with the staff member assembling the case carts.
- We utilized the 5 Whys to do a quick Root Cause Analysis.

DEFECT	REASONS
What DEFECT occured?	"The case cart was wrong again"
1. Why did THAT occur?	"It had a podiatry pack on it, but the surgery was a craniotomy!!"
2. Why did THAT occur?	"We put exactly what was on the list on the cart"
3. Why did THAT occur?	"We follow the lists to know what bins the items are located in"
4. Why did THAT occur?	"The lists are not right, seems like most of the items aren't where the pick sheets say they are supposed to be"
5. Why did THAT occur?	"Things get moved and nobody updates the computer with the correct location."

FMEA

Process Step/Input	Potential Failure Mode	Potential Failure Effects	SEV	Potential Causes	OCC	Current Controls	DET	RPN	Actions Recommended	Resp.	Actions Taken	SEV	OCC	DET	RPN
What is the process step/ Input under investigation?	In what ways does the Key Input go wrong?	What is the impact on the Key Output Variables (Customer Requirements) or internal requirements?	How Severe is the effect to the customer?	What causes the Key Input to go wrong?	How often does cause or FM occur?	What are the existing controls and procedures (inspection and test) that prevent either the cause or the Failure Mode? Should include an SOP number.	How well can you detect cause or FM?		What are the actions for reducing the occurrence of the Cause, or improving detection? **Should have actions only on high RPN's or easy fixes.**	Whose Responsible for the recommended action?	What are the completed actions taken with the recalculated RPN? **Be sure to include completion month/year**				
CSPD employees usa a printed "pick sheet" to fill the case cart with soft goods needed for the procedure	The Lawson number for the items is not on individual items	Employee can not find the appropriate item so the customer may not get what is asked for	10	The Lawson number is internal to the organization, therefore when stock is removed from manufactureres shipping boxes it is not visible to satff.	4	Employees are to locate the item by the "location number" then read the label to see that the name matches	8	320							0
	The item name on the pick list may not match the name printed on the label	Employee can not find the appropriate item so the customer may not get what is asked for	10	Systems not updated when product changes occur, or distributers change	10	Employees are to locate the item by the "location number" then read the label to see that the name matches	8	800	Complete inventory of items in storeroom to update with names actually on items, report any changes to supply chain for	LEAN team, CSPD staff, Supply chain	Goal date of completion: June 12, 2015	1	1	2	2
	The catalog number on the pick list is not on the item	Employee can not find the appropriate item so the customer does not get what is asked for	10	Systems not updated when product changes occur, or distributers change	4	Employees are to locate the item by the "location number" then read the label to see that the name matches	8	320							0
	The bin location listed on the pick sheet is not accurate	Employee can not find the appropriate item so the customer will get the wrong item	10	Items are moved to accommodate changes or spacial issues but sysytem does not get updated to reflect this	10	Employees are to locate the item by the "location number" then read the label to see that the name matches	8	800	complete inventory of items in storeroom to acquire current location, report any changes to supply chain for	LEAN team, CSPD staff, Supply chain	Goal date of completion: June 12, 2015	1	1	2	2
	Staff did not know what the two rows of numbers on the pick list represnted	Employee does not give the correct number of items requested by the cuscomer	10	Training insufficient	6	Employees are to total the two columns to get the total number of specified items they are responsible for placing on the case cart	8	480							0

Using this tool enabled the team to focus on the two areas of failure that would yield the most reward if improved.

Solution options

Criteria	Existing Process	Change locations of bins	Change computer to reflect current	Label individual items by Lawson number	Color code bins	Importance Rating
Cost of new equipment	0	0	0	-3	-9	4
Labor cost	0	-3	-1	-9	-9	4
Speed of completion	0	-9	-1	-9	-9	4
Ease of completeion	0	-3	-1	-9	-3	3
Retraining of established staff	0	0	3	-3	-3	3
Effect on customer	-9	1	1	1	1	5
Sum of Positives	0	1	2	1	1	
Sum of Negatives	1	3	3	5	5	
Sum of sames (zeros)	5	2	1	0	0	
Weighted Sum of Positives	0	5	14	5	5	
Weighted Sum of Negatives	-45	-57	-11	-120	-126	

Based on the highlighted results on this design matrix, option C is the most feasible solution for this project.

Rate criteria 1 to 5 where:

5 = Very important

1 = Little importance

Rate impact of solution on criteria:

9 = Very high positive impact

3 = significant positive impact

1 = Some positive Impact

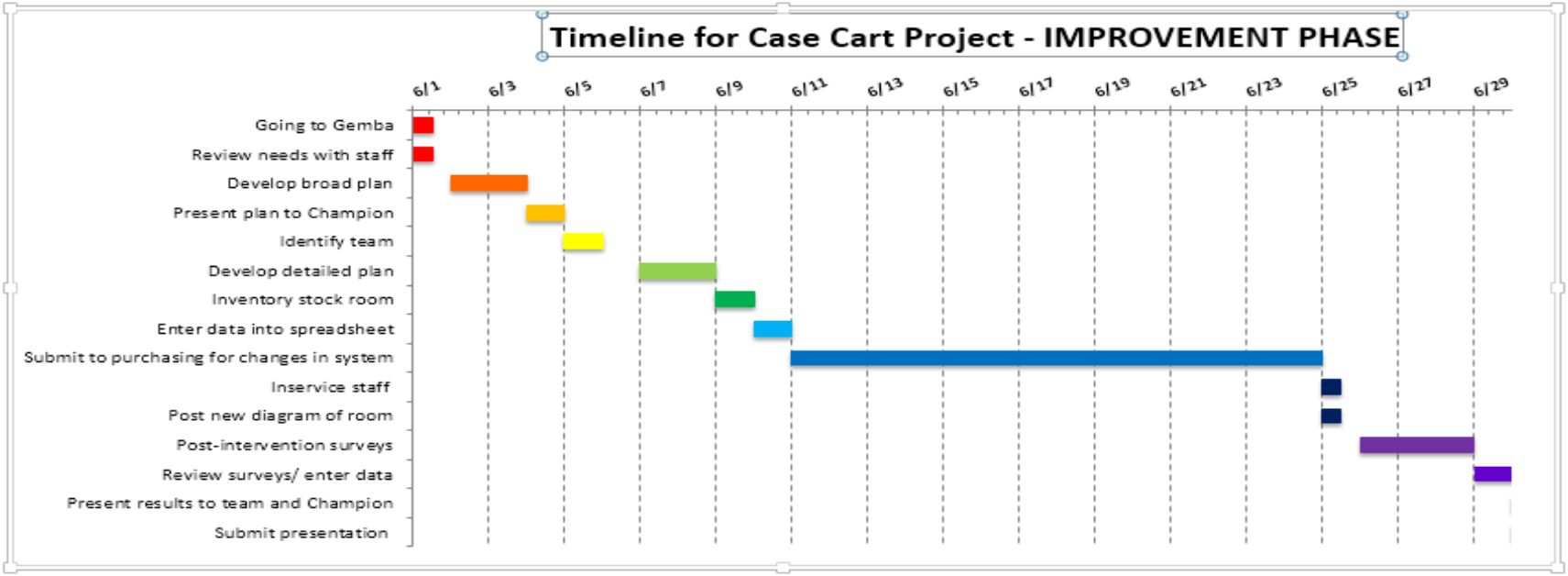
0 = Same as current process

-1 = Some negative Impact

-3 = Significant negative Impact

-9 = Very high negative Impact

Gantt Chart



Task Name	Start	End	Duration (days)
Going to Gemba	6/1	6/1	0.5
Review needs with staff	6/1	6/1	0.5
Develop broad plan	6/2	6/4	2
Present plan to Champion	6/4	6/5	1
Identify team	6/5	6/6	1
Develop detailed plan	6/7	6/9	2
Inventory stock room	6/9	6/10	1
Enter data into spreadsheet	6/10	6/11	1
Submit to purchasing for changes in system	6/11	6/25	14
Inservice staff	6/25	6/26	0.5
Post new diagram of room	6/25	6/26	0.5
Post-intervention surveys	6/26	6/29	3
Review surveys/ enter data	6/29	6/30	2
Present results to team and Champion	6/30	6/30	0.5
Submit presentation	6/30	6/30	0.5

We met as a group and developed a time line for the improvements.

Solution Implementation Plan

- What actions will be taken, by whom, when?

ACTION TO BE TAKEN	*RESPONSIBLE TEAM MEMBER*	*CONSULT/ASSIST*	*DEPARTMENT/Title*	*DEADLINE*
Data list of current items with location	Terri Savage RN	Donna Barr	OR Material Manager	6/6/2015
Linkage of pick sheet to Lawson System	Terri Savage RN	Chris Jones	Inventory Management	6/7/2015
Inventory of stock room	Gigi Hubbard RN	Dennis Krajcirik Rachael Bohnett	Coordinator OR Materials Coordinator OR Materials	6/10/2015
Data entry of changes	Shelley Belak			6/11/2015
Computer changes into Lawson system	Terri Savage RN Gigi Hubbard RN	Donna Barr	OR Material Manager	6/25/2015
Physical changes for better flow	Shelley Belak	Dennis Krajcirik Rachael Bohnett	Coordinator OR Materials Coordinator OR Materials	6/25/2015
Diagram of Shelving Location	Gigi Hubbard RN	Dennis Krajcirik Rachael Bohnett Wilonia Bradford	Coordinator OR Materials Coordinator OR Materials Tech I, CSPD	6/25/2015
In-service staff on changes	Gigi Hubbard RN	Vicki Jenkins RN	CSPD Manager	6/26/2015

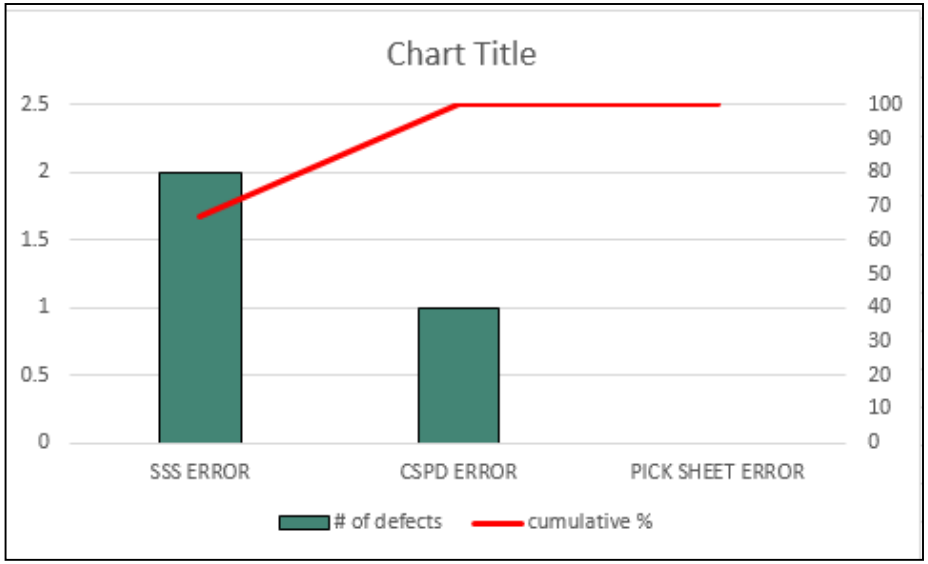
- How will we validate that the solution works?

Repeat surveys will be sent out on every case cart the day after the change to evaluate if the improvements have been successful.

Evidence of solution result

Primary metric

Defect	# of defects	cumulative defects	cumulative %
SSS ERROR	2	2	66.66666667
CSPD ERROR	1	3	100.0
PICK SHEET ERROR	0	3	100



Projected observations: 45
Actual observations: 33 (Due to cancellations and time constraints)

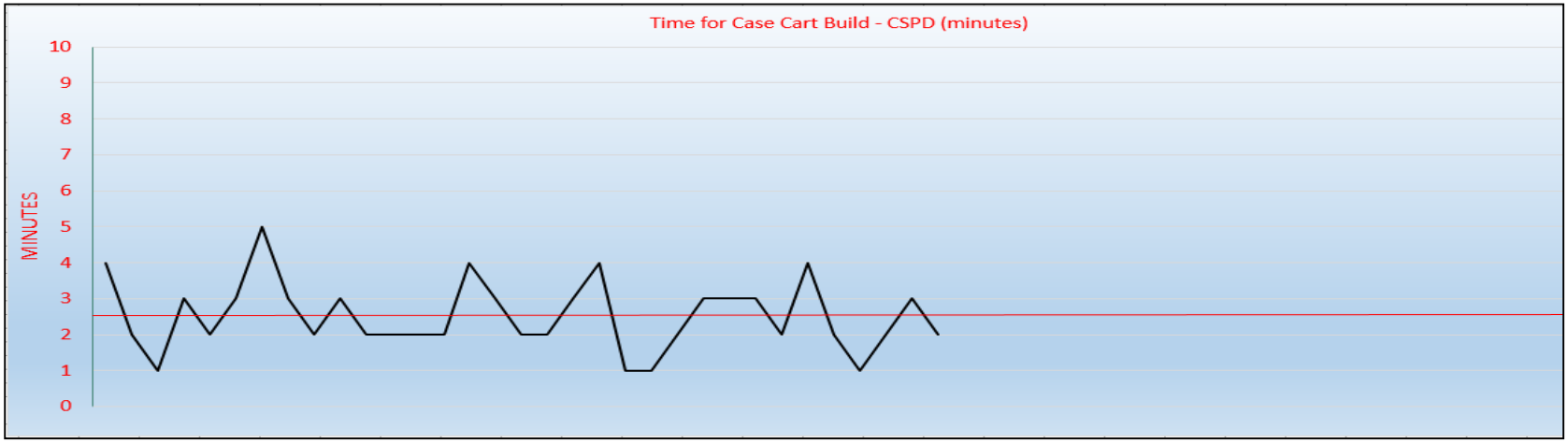
CSPD DEFECT RATE: 3% SSS DEFECT RATE: 6% PICK SHEET DEFECT: 0%

Based on the information from the post-intervention surveys, there was a 9% decrease in the amount of defects per cart. Based on 50 operational weeks a year, 5 days a week, with an average of 45 cases a day, there are an estimated 11,250 OR procedures a year. This will eliminate an estimated 1,012 defective carts a years.

Evidence of solution results

Secondary metric

An important part of this plan was to ensure that there was no additional financial requirement. To monitor this, we compared the baseline data with the post intervention data.



Based on the data above, the average time spent on case cart assembly by CSPD person is now 2.51 minutes per cart. With the average FTE making $16.90 per hour, this amounts to $0.71 per cart. This is a 48% decrease in time spent. Based on 50 operational weeks a year, 5 days a week, with an average of 45 cases a day, there are an estimated 11,250 OR procedures a year.

Original labor cost spent on building carts per year = $1.47 X 11,250 cases = $16,537.50
Improved labor cost spent on building case carts per year = $0.71 X 11,250 = $ 7,987.50
Savings per year = $ 8,550.00

Evidence of solution results

Cost-Benefit Analysis (CBA)

		Fiscal Year									
Program Element	Element Manager	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Infection Control Specialist		$560	$0	$0							
Quality Control Specialist		$560		$0	$0	$0					
Human Resource Specialist		$280		$0	$0	$0					
Material Mngmt X2		$320		$0	$0	$0					
				$0	$0	$0					
			$0	$0							
Program Total Costs By Year		$1,720	$0	$0	$0	$0	$0	$0	$0	$0	$0
Program Grand Total Cost	$1,720										

	Fiscal Year									
Benefit Sources	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Labor Reduction	$8,550	$8,550	$8,550	$8,550	$8,550	$8,550	$8,550	$8,550	$8,550	$8,550
**Late start	$323,132	$324,852	$324,852	$324,852	$324,852	$324,852	$324,852	$324,852	$324,852	$324,852
Total Benefits Per Year	$331,682	$333,402	$333,402	$333,402	$333,402	$333,402	$333,402	$333,402	$333,402	$333,402
Confidence Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Benefits Claimed for Analysis	$331,682	$333,402	$333,402	$333,402	$333,402	$333,402	$333,402	$333,402	$333,402	$333,402
Program Grand Total Benefit	$3,332,300									

**Late start benefit is based on:

50 operative weeks X 5 days X 45 cases a day= 11,250 cases a year

11,250 X 9%= 1,012 improved/not defective carts per year

1,012 carts with 5 min late start = 5060 minutes

5,060 minutes X $64.20 (estimated cost per OR minute) = $324,852

Improve Phase summary slide

What did we do?

The team was able to implement a plan that improved the accuracy of the case carts supplied to the Operating Room.

How well did it work?

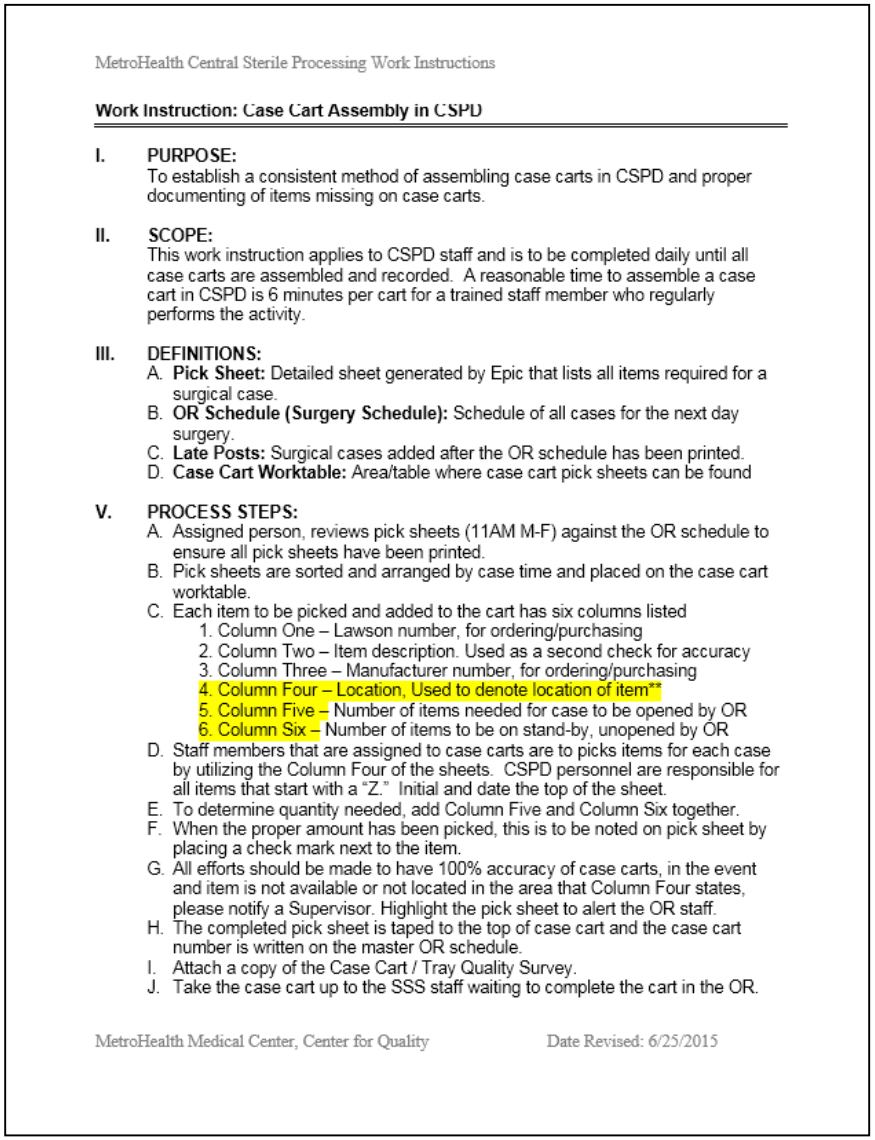
Not only did it improve customer satisfaction, it also proved to be a financial gain for the facility with estimated savings of over $30,000 a year in labor costs.

What were the results compared to our project objectives?

The team accomplished and exceeded the project objectives.

Control tools used

- **Standardized Work:** A revised Work Instruction that details step by step instructions and expectations was implemented and posted in the room to serve as a visual reminder of the process.



MetroHealth Central Sterile Processing Work Instructions

Work Instruction: Case Cart Assembly in CSPD

I. PURPOSE:
To establish a consistent method of assembling case carts in CSPD and proper documenting of items missing on case carts.

II. SCOPE:
This work instruction applies to CSPD staff and is to be completed daily until all case carts are assembled and recorded. A reasonable time to assemble a case cart in CSPD is 6 minutes per cart for a trained staff member who regularly performs the activity.

III. DEFINITIONS:
A. **Pick Sheet:** Detailed sheet generated by Epic that lists all items required for a surgical case.
B. **OR Schedule (Surgery Schedule):** Schedule of all cases for the next day surgery.
C. **Late Posts:** Surgical cases added after the OR schedule has been printed.
D. **Case Cart Worktable:** Area/table where case cart pick sheets can be found

V. PROCESS STEPS:
A. Assigned person, reviews pick sheets (11AM M-F) against the OR schedule to ensure all pick sheets have been printed.
B. Pick sheets are sorted and arranged by case time and placed on the case cart worktable.
C. Each item to be picked and added to the cart has six columns listed
   1. Column One – Lawson number, for ordering/purchasing
   2. Column Two – Item description. Used as a second check for accuracy
   3. Column Three – Manufacturer number, for ordering/purchasing
   4. Column Four – Location, Used to denote location of item**
   5. Column Five – Number of items needed for case to be opened by OR
   6. Column Six – Number of items to be on stand-by, unopened by OR
D. Staff members that are assigned to case carts are to picks items for each case by utilizing the Column Four of the sheets. CSPD personnel are responsible for all items that start with a "Z." Initial and date the top of the sheet.
E. To determine quantity needed, add Column Five and Column Six together.
F. When the proper amount has been picked, this is to be noted on pick sheet by placing a check mark next to the item.
G. All efforts should be made to have 100% accuracy of case carts, in the event and item is not available or not located in the area that Column Four states, please notify a Supervisor. Highlight the pick sheet to alert the OR staff.
H. The completed pick sheet is taped to the top of case cart and the case cart number is written on the master OR schedule.
I. Attach a copy of the Case Cart / Tray Quality Survey.
J. Take the case cart up to the SSS staff waiting to complete the cart in the OR.

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Leverage actions identified

1. **Wasted Inventory** - Re-stocking Unused Items:

- One major opportunity to apply solutions beyond the original project scope is in the area of re-stocking the items that were unused in the OR.
- It was learned that inadequate education was provided to the staff on how to do this.
- Staff placing the items in the wrong bins may have been another separate issue that caused defective case carts.
- Using the inventory sheets we have from this project, our plan is to build a master file of inventory based on an alphabetical listing of the products
- This will allow even an inexperienced staff member to consult the list to find the proper location to return the item to.

2. **Wasted Motion** – Store room Overhaul:

- Even with the improved accuracy of the bins, the spaghetti diagram details the wasted movement of staff members in the stock room.
- Working with materials management to list the items needed in order based on the location of the item would cut down on wasted movement.
- Currently evaluating a plan that allows more frequently used items to be closer to the staging area.

Summary of Project

1. What were the results compared to our expectations for the project?

- Initially, The expectation was that most case cart errors/defects were related to the SSS part of the assembly phase.
- However, the surveys determined that the area that needed improvement was the CSPD part of the assembly.

2. What value have customers gained from our project?

- The customer (the OR staff) have benefited from this project because there has been a marked decrease in the amount of defective case carts.
- Since all of the carts are more accurate, there is less time spent looking for missing items. This will help to decrease the amount of “late starts” that the OR incurs.
- Late starts cost the facility approximately $64.20 per minute.
- ***It would be an interesting metric to monitor is this change has provided a significant decrease in this are!

Summary of Project

3. What value has the organization gained from our project?

- Sharing the lessons learned with other parts of the organization.
- Working directly with the OR Materials Management team on this project has enabled both departments a better opportunity to have a more controlled inventory system.
- It is suggested that CSPD and the SSS team will evaluate the location of the other items that are listed on the pick sheets to mirror this project.
- The staff was immediately receptive to the changes, and enjoyed participating as they were frustrated with the constant errors and difficulty locating the proper items.

The project has provided an opportunity to foster a better working dynamic between all departments involved in the production of the case carts. This ensures that not only are the customers happy, ultimately the patients are safer!!

Appendix

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- CASE CART / TRAY QUALITY SURVEY FORM

G:\periop\CSPD\2014 FORMS\CASE CART SURVEY

- WORK INSTRUCTIONS CASE CART

G:\periop\CSPD\2014 Work Instructions\2014 Case Cart Assembly

ALL other forms and charts can be accessed here:

http://mhsharepoint/Departments/QM/SixSigma/Shared%20Documents/Forms/AllItems.aspx?RootFolder=%2fDepartments%2fQM%2fSixSigma%2fShared%20Documents%2fCase%20Carts%20Project