## HEALTHCARE SYSTEMS PROCESS IMPROVEMENT

**CONFERENCE 2014** 







# Redefine Expert Engaging Frontline Staff in Lean Continuous Improvement

Isaac B. Mitchell

Lean Coordinator, East Tennessee Children's Hospital

## **East Tennessee Children's Hospital**

- Private, independent, not-for-profit pediatric medical center
- The only comprehensive regional pediatric center in East Tennessee
- 152 bed hospital with over 148,000 patient visits a year Children's Hospital
- www.etch.com



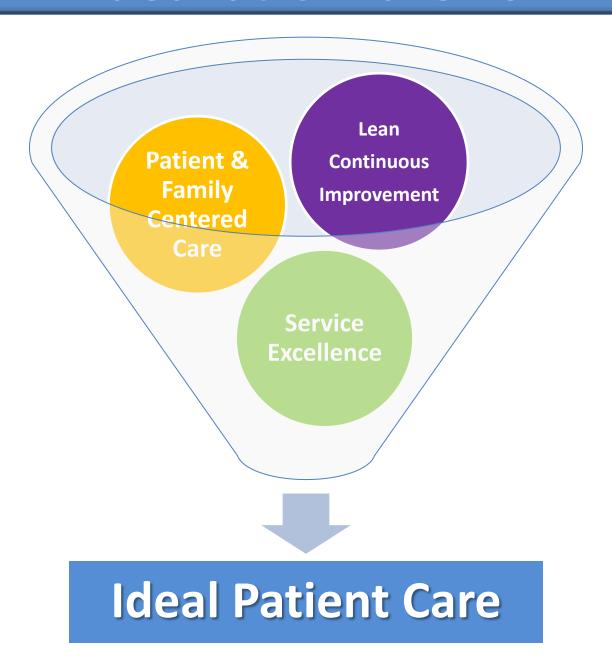
## Who is the Expert?



or



## Ideal at Children's



## Improvements at Children's









## Safe



## Waste Free



## **Types of Problem Solving**

#### **First Order:**

A quick temporary fix
 "workaround" that does
 nothing to prevent the
 problem from repeating.

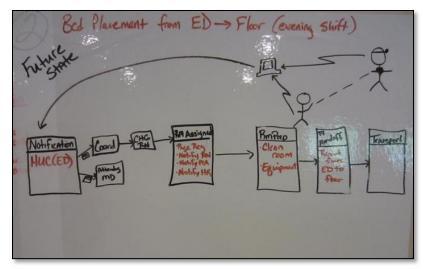
#### **Second Order:**

 Gets at the <u>root cause</u> and solves the problem for future patients and clinicians.

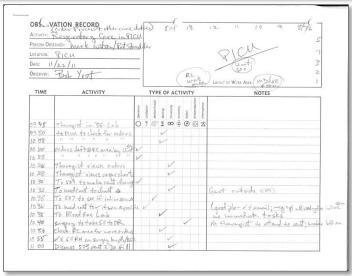
## **Tools to Get You to Ideal Patient Care**



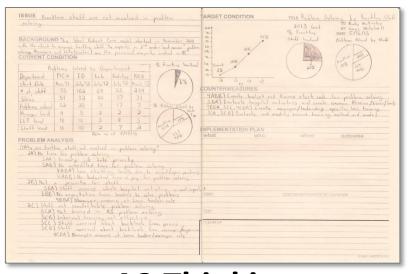
**Lean Basics** 



**Value Stream Mapping** 



**Direct Observation** 



A3 Thinking

## It all starts with an idea.



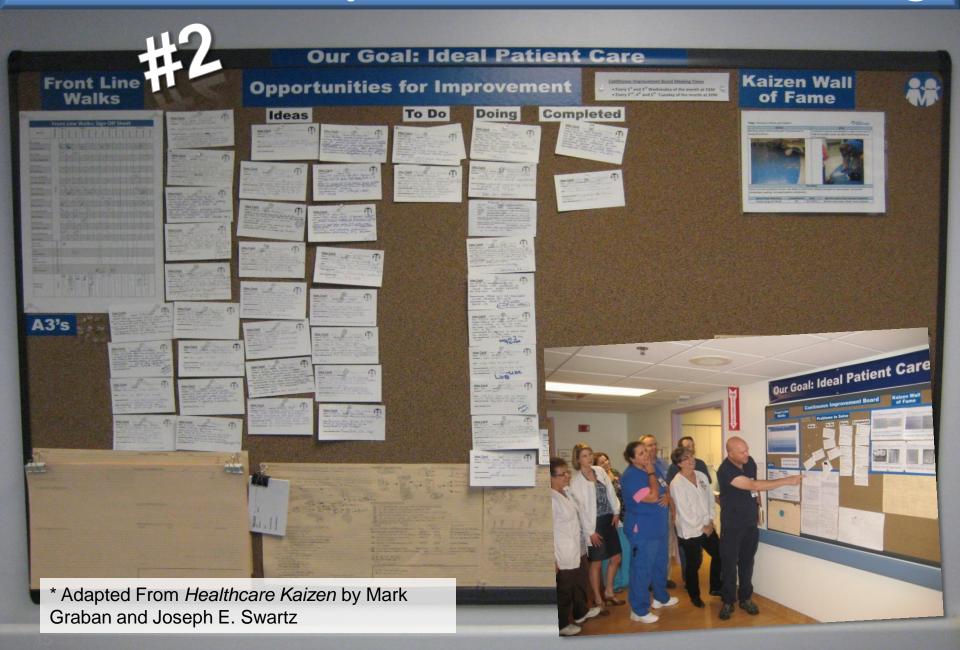


## Idea Card: Ideas / To Do / Doing / Completed Date: \_\_\_\_\_ Idea By: \_\_\_\_ Problem: \_\_\_\_\_ ldea:\_\_\_\_\_ Expected Benefit: Input Needed From:\_\_\_\_\_ Patient and family input needed ☐ yes ☐ no



Form No. 30174 (09/13) ss

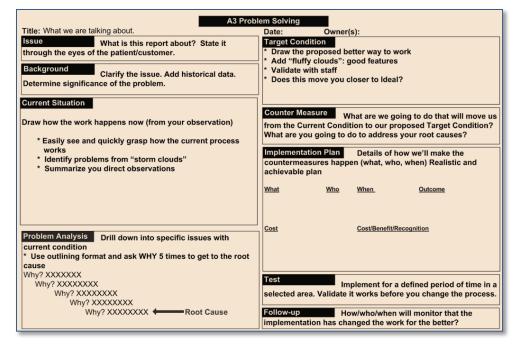
## **Continuous Improvement Board Meeting**



## **Problem Solving**

Idea cards can turn into A3 problem solving projects





## **Celebrate and Share Information**



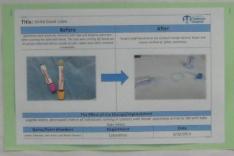
## IDEAL PATIENT CARE

(ONTINUOUS









Title: Reagent, Supply, and Stock Orde	iring System	Idea By: Childwik Russell Williams Happin
Before		After
No system to recommendate them that hand to be res-		s board and poil of paper in each department for miscoly communicate papers minds
	1	Arm top has been also the
There was no system		
	fect of the Change limprovema	
The E	fect of the Change limprovema	



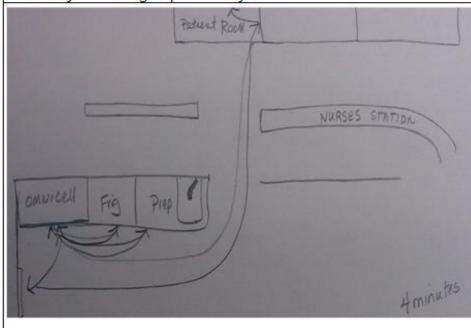


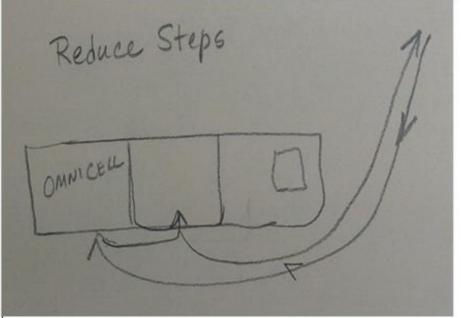
## **PICU Wall of Fame Document**

Title: Ativan Storage



Before	After	
Multistep process taking at least 4 minutes to retrieve a	Fewer steps, retrieving Ativan takes less than one	
dose of Ativan, potentially having a patient incurr a	minute	
seizure for a longer period of time		
2 du de		





#### The Effect

Quicker delivery of a dose to a patient with full accounting for the dose given.

Name/Team Members	Department	Date	Benefit and/or Cost Savings (Optional)	
Pam Myers / Judy Potter	PICU/Pharm	3/1/2012	Decrease RN time to dose	

### Lab Wall of Fame Document

**Title:** Nasal Washings for Flu and RSV

Idea By:

Amber Edmiston



#### Before

This is what was used before. We took 3 3ml ampoles and opened them and squeeze them into clean urine container then sucked it up with



This one comes prefilled with the tubing arleady set up for the syringe and is a little cheaper and a lot less prep time for the nasal washing.





#### The Effect of the Change/Improvement

Before we had to take 3 one ML tubes of saline and empty them into a sterile urine cup and draw the saline into a syringe then cut the needle end off of a butterfly and squirt the saline into the nose and draw it back out then remove the tubing and cap the syringe. With the preloaded syringe all

Name/Team Members	Department	Date	Benefit an/or Cost Savings (Optional)
David Wilkerson and Amber Edmiston	Lab Lean	9/19/2013	Patient Safety and Employee Satisfaction

## **ED Wall of Fame Document**

**Title:** Physician Assistant access to supplies



Before	After
PAs had to wait for an RN/Tech/HUC to open the	PAs were given access to the OptiFlex and can gather
OptiFlex in order to get out routinely used supplies.	their needed supplies without waiting on another
	person.



#### The Effect

Reduced order entry time; reduced patient wait time; increased efficiency for multiple providers.

Name/Team Members	Department	Date	Benefit and/or Cost Savings (Optional)
Molly W. Christy C.	ED	12/1/2012	Increased patient satifaction.

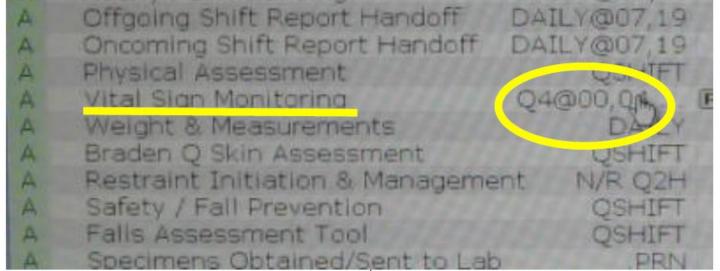
## 2<sup>nd</sup> Floor Wall of Fame Document

**Title:** Regular Vital Signs

Idea By: Mindy Carter



Before	After	
Patients not getting all vital signs measured daily because no reminder on worklist.	Clock on PCA and RN's worklist defaults to every 4 hours for vitals to be taken.	
A Offgoing Shift Report H	Handoff DAIL VOIDT 19	



#### The Effect of the Change/Improvement

Patients have vitals taken on more consistent basis = more regular assessments = better patient care and increased safety.

Name/Team Members	Department	Date
Mindy, Aimee, Tonia	2nd Floor	10/28/2013

## 1<sup>st</sup> Order vs. 2<sup>nd</sup> Order Problem Solving

Did you take the patients vital signs?!?!?

Um, yeah.....did you remember to take your patient's vital signs?
That would be great, mmmkay?

Ask me about your vital signs.





### Wall of Fame Archive



#### Children's ETCHnet

#### LEAN



#### Cafeteria menu

Search ETCHnet

Go

Integrity hotline: 541-8001

**Policies** 

#### Documents and Resources

Status Change Form Direct Reports

#### **Department News**

#### **Hours of Operation**

8:00am - 4:30pm, Monday through Friday

#### **Location and General Info**

OFFICE LOCATION: Ground Floor, Main Hospital \*First door on the right project you need help with? Fill out the project request form below or ema

#### Services Provided

Project Request

#### **Department Pages**

Proj Request Results

#### **Department Scripting**

#### **Documentation and Resources**

Continuous Improvement Board Meeting Time

Ideal Patient Care Leader, Learner, Teacher (LLT) Directo

Monthly Problem Solving Metrics

Lean Part Numbers

Documents and Forms

ldeal Patient Care Wall of Fame

#### Title: ER Oxygen Tanks

Idea By: Michael T



Before	After
It is difficult to easily locate a full tank of oxygen	With a quick glance you can see which tanks are
at a glance.	unable to be used.





#### The Effect of the Change/Improvement

No time wasted searching through the rack for a full oxygen tank.

Name/Team Members	Department	Date	Benefit an/or Cost Savings (Optional)
Stacey L, Michael T, Carol S	ER	6/13/2013	Increased Patient Safety, Decreased Staff frustration.

Email news, events, highlights and questions to ETCHnet@etch.com

Sign out

## **New Definition: Ideal Patient Care**

Quit doing crazy, ridiculous, wasteful, time consuming, unsafe things that prevent you from providing the best care possible for your patients.

## **Continuous Improvement Mechanics**



## **Departmental Model Rollout**

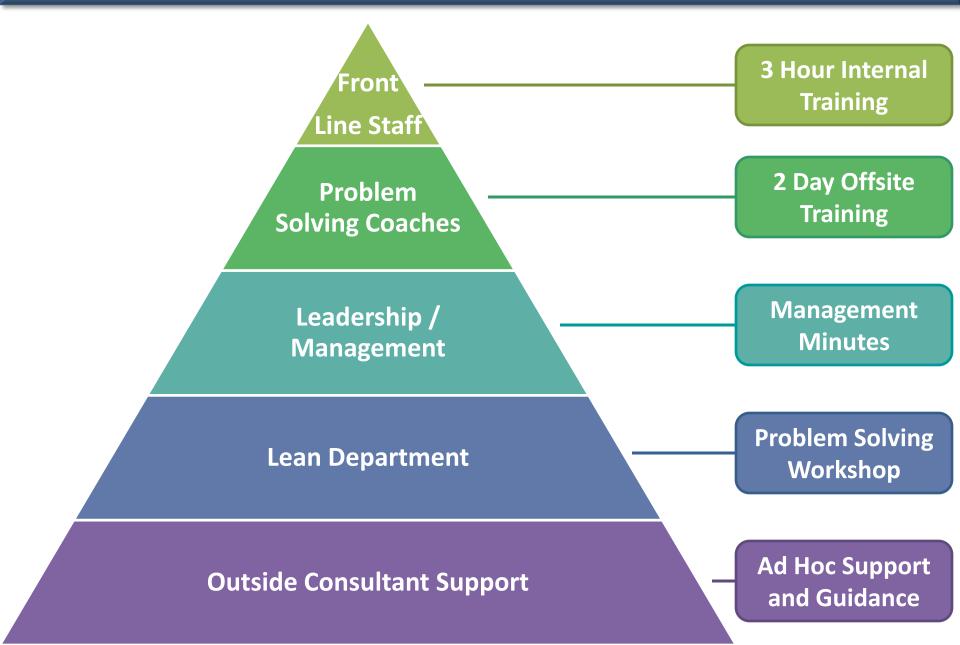
#### Current

- PICU
- ED
- Lab
- Radiology
- NICU
- 2<sup>nd</sup> Floor
- 2<sup>nd</sup> Clinic
- 3<sup>rd</sup> Floor
- 3<sup>rd</sup> Clinic
- Outpatient Surgery
- Inpatient Surgery
- Surgery
- PACU

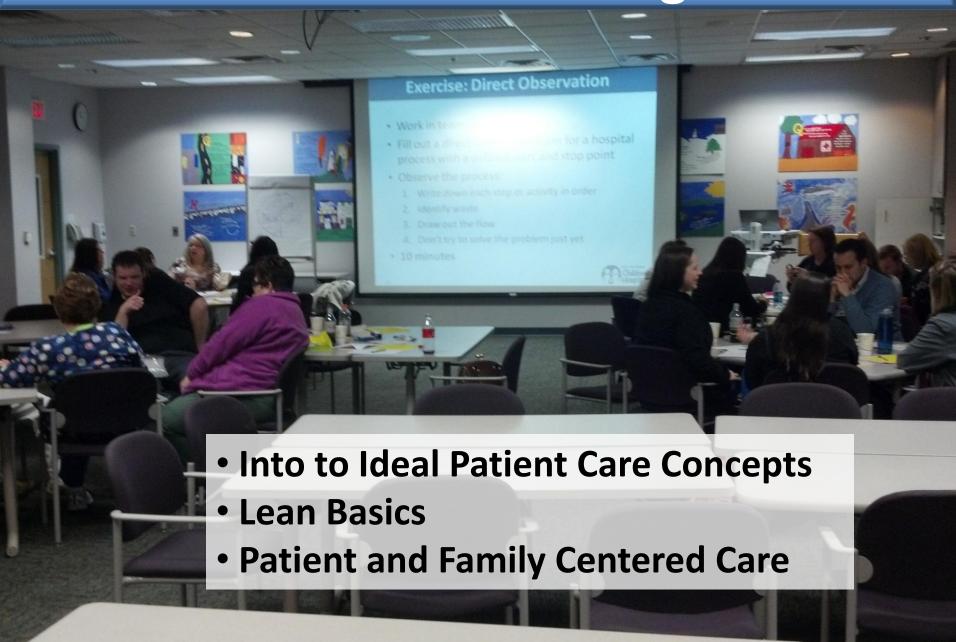
#### **Planned**

- Materials Management
- Pharmacy
- Respiratory Care
- Food and Nutrition
  - · Create model lines.
  - Two departments every three months.
  - Build the support system to ensure they can self sustain.

## **Support Systems**



## **Frontline Training**



## **Problem Solving Coach Training**

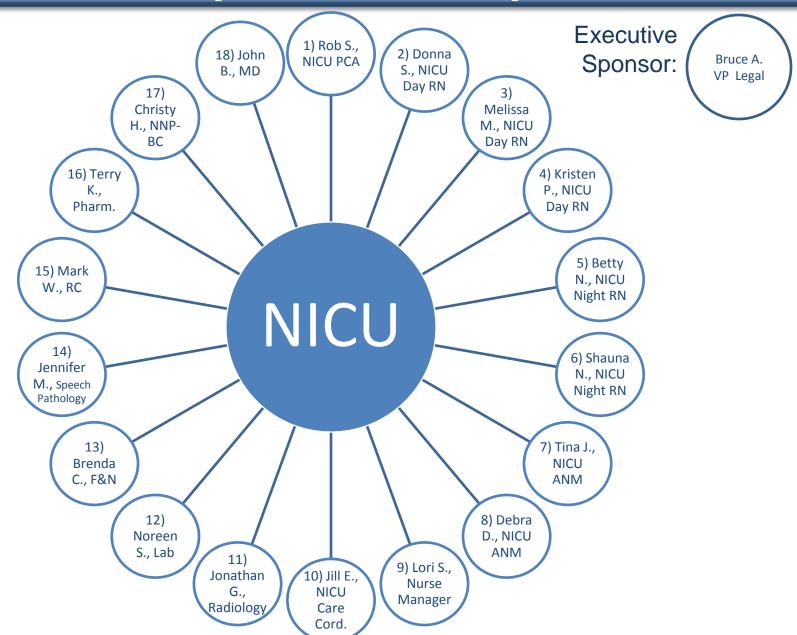
- Problem Solving Coach: LLT\*
  - Learner: Learn Ideal Patient Care tools by practice
  - Leader: Lead frontline staff at the bedside in problem solving and tools

 Teacher: Teach future LLT's and staff to spread knowledge and improvements

"Tell me and I forget.
Teach me and I remember.
Involve me and I learn."
-Ben Franklin

<sup>\*</sup> Source: Kenagy, John MD Designed To Adapt

## Sample LLT Group



## **Staff Expectation**

#### Frontline Staff:

- Identify opportunities for improvement
- Participate in A3 problem solving

#### • LLTs:

- Lead, teach, and coach staff in A3 problem solving
- Initiate, create, and complete A3 problem solving projects.
- Act as a departmentliaison for projects



## **Leadership Training**

### Lean Management Minutes

- Going to gemba
- Leadership standard work
- Participation in improvements
- Coaching staff on A3s
- Setting expectations
- Asking the right questions
- When to coach vs. giving instruction
- Running a Lean meeting



## **Leader Expectation**

- Develop people with the capacity to problem solve
- Coach frontline staff on problem solving
- Provide time and opportunities for Ideal Patient Care
- Remove barriers that prevent Ideal Patient Care
- Give input on the effect of the changes at hospital wide level

### **How to Create Time**

- See a problem...fill out an idea card
- Work on it during down time
- Make it a part of committee involvement and work



- Make a monthly time commitment and stick to it
- Identify projects and work with your manager to schedule off unit time to work on it
- Use your Lean and Guest Relations resources to help
- Sign up for the Lean Problem Solving Workshop

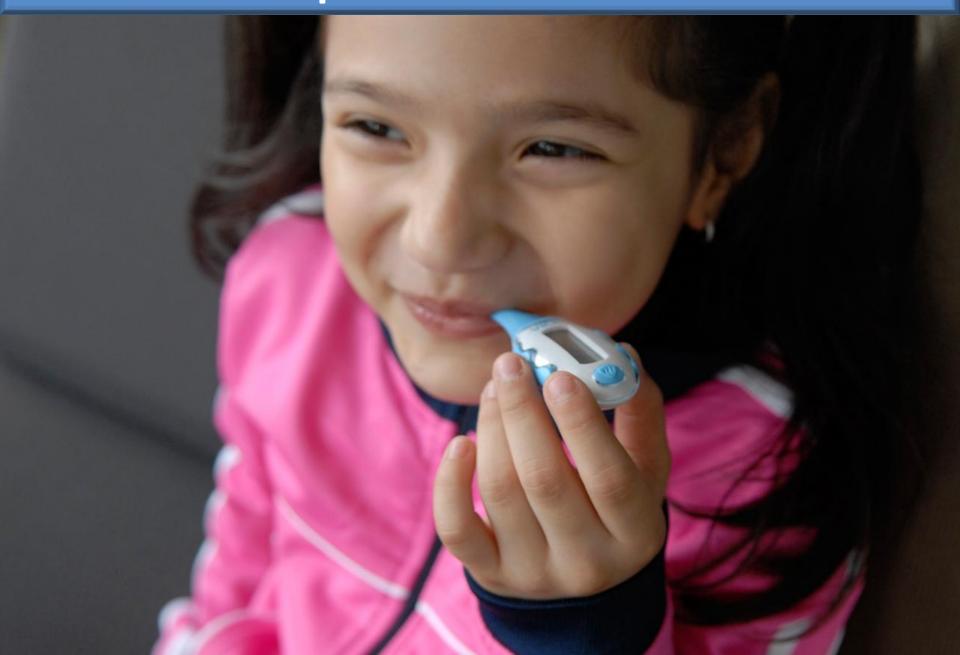
## **Problem Solving Workshop**



## **Learn By Doing**



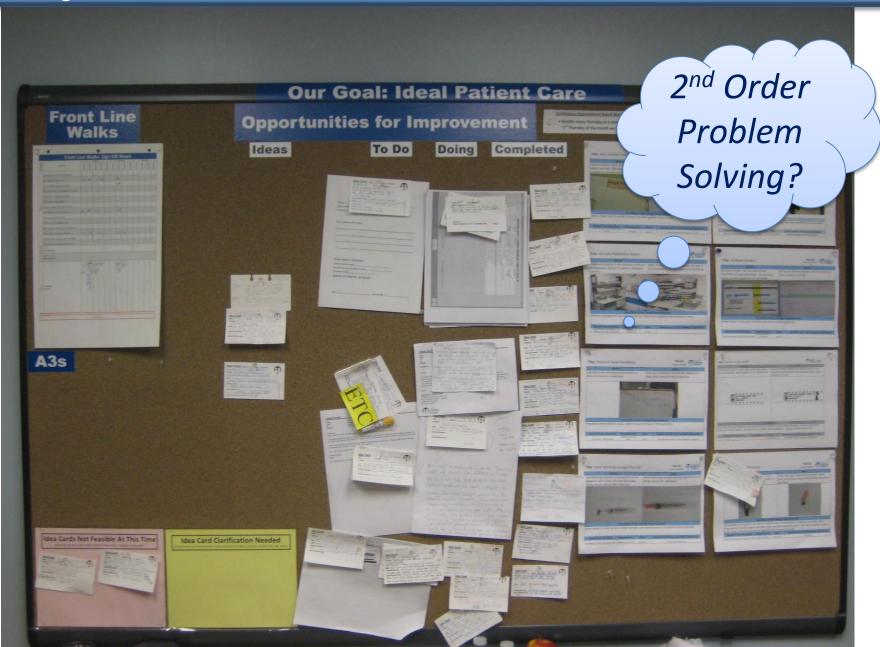
### **Continuous Improvement Health Assessment**



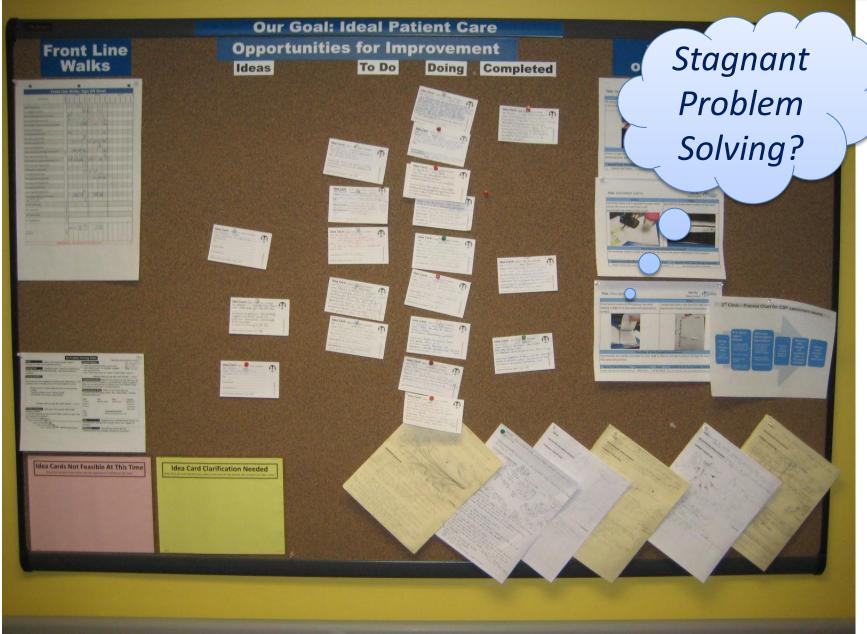
## **Department 1 – Health Assessment**



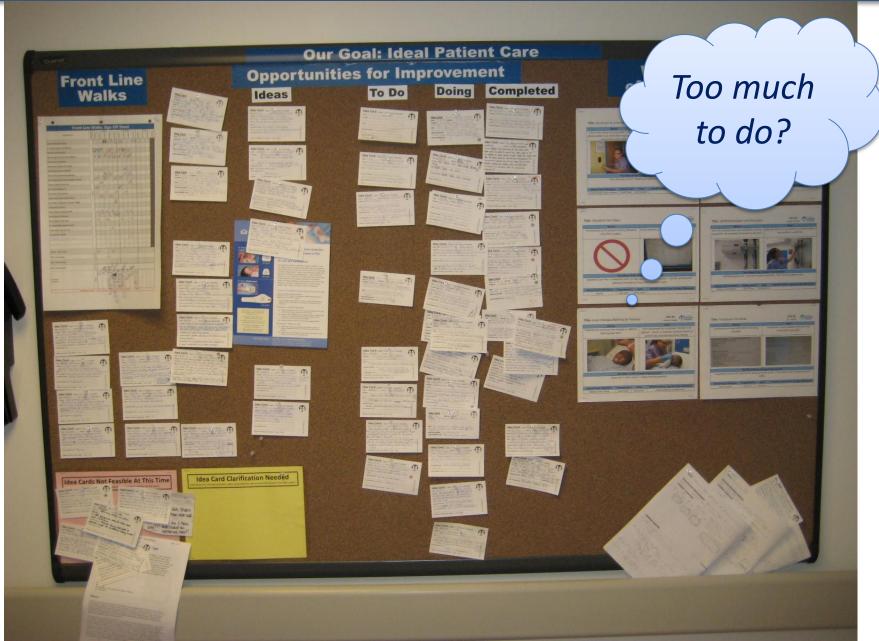
## **Department 2 – Health Assessment**



## **Department 3 – Health Assessment**



## Department 4 – Health Assessment



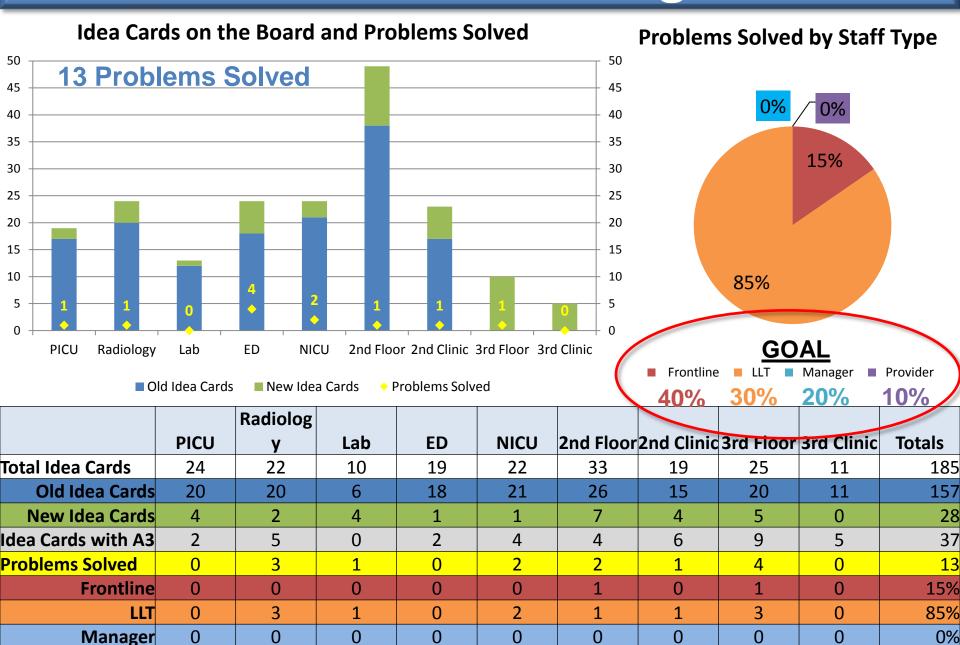
## **Department 5 – Health Assessment**



### What's Your Health Assessment?



## **December Problem Solving Numbers**

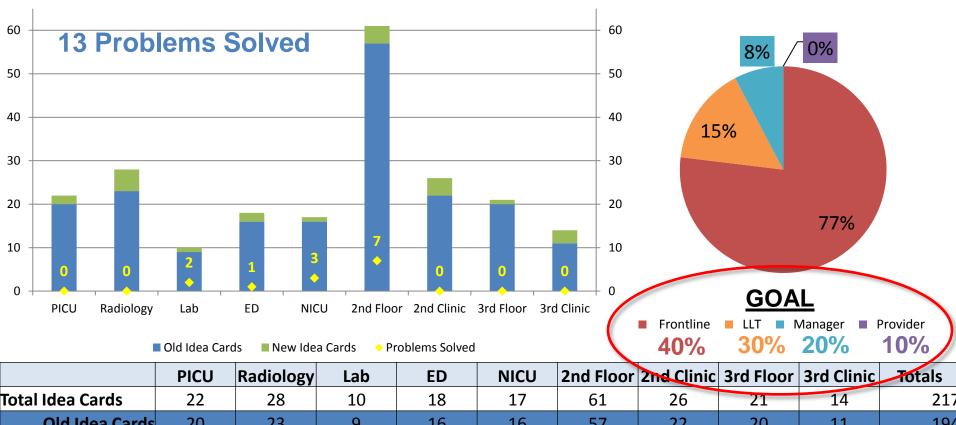


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## **January Problem Solving Numbers**

**Idea Cards on the Board and Problems Solved** 

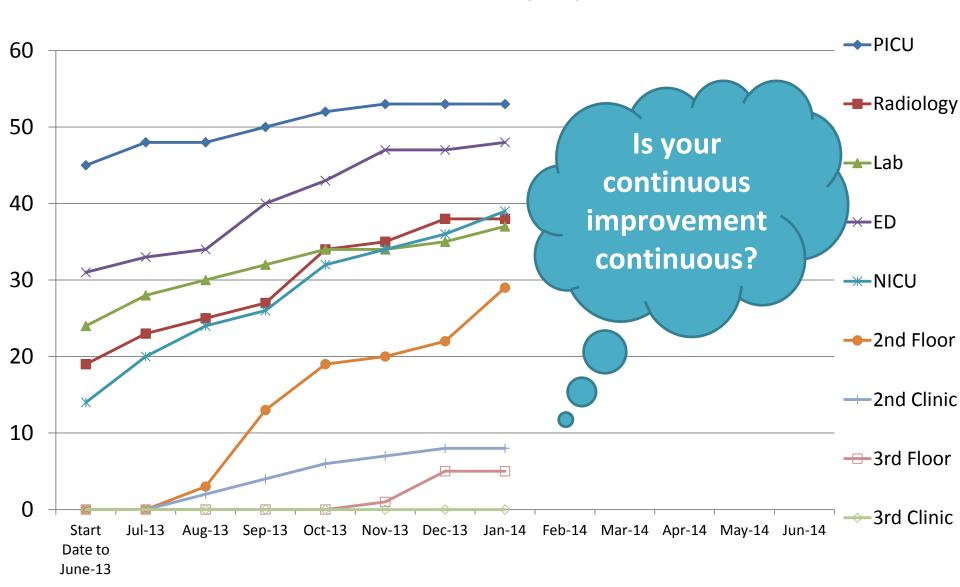
**Problems Solved by Staff Type** 



	Old Idea Car	ds New Ide	a Cards 🔸 Pi	roblems Solved			40%	30%	20%	10%
	PICU	Radiology	Lab	ED	NICU	2nd Floor	2nd Clinic	<b>3rd Floor</b>	3rd Clinic	<b>Totals</b>
Total Idea Cards	22	28	10	18	17	61	26	21	14	217
Old Idea Cards	20	23	9	16	16	57	22	20	11	194
New Idea Cards	2	5	1	2	1	4	4	1	3	23
Idea Cards with A3	1	5	0	2	5	6	6	9	5	39
Problems Solved	0	0	2	1	3	7	0	0	0	13
Frontline	0	0	2	1	1	6	0	0	0	77%
LLT	0	0	0	0	1	1	0	0	0	15%
Manager	0	0	0	0	1	0	0	0	0	8%
Provider	0	0	0	0	0	0	0	0	0	0%

## **Cumulative Problem Solving**

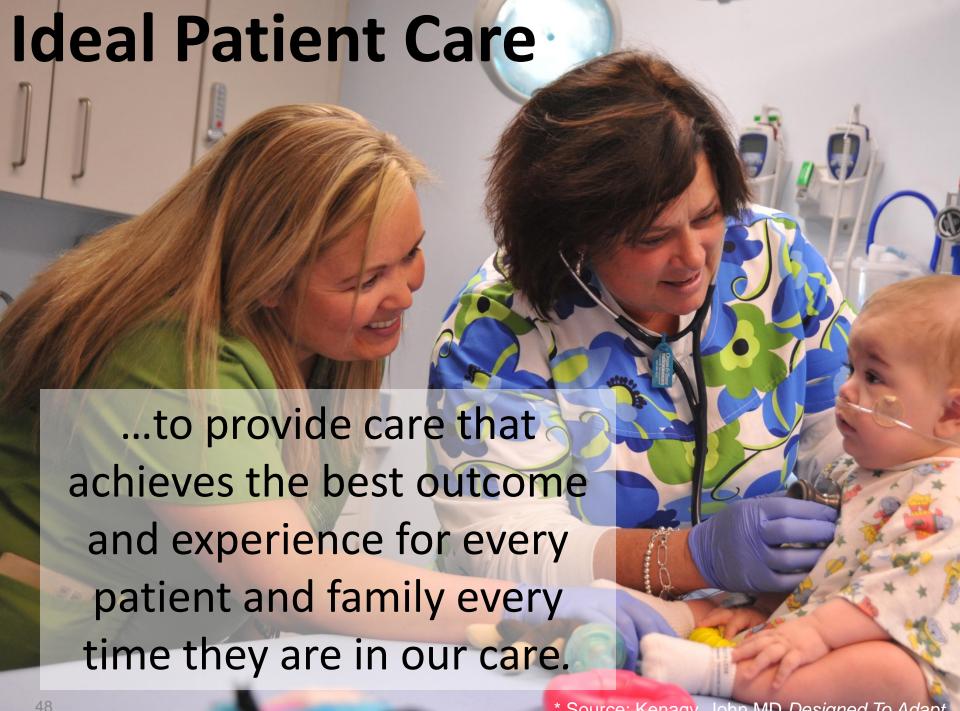
Trend of Sum of Problems Solved by Department for FY 13/14



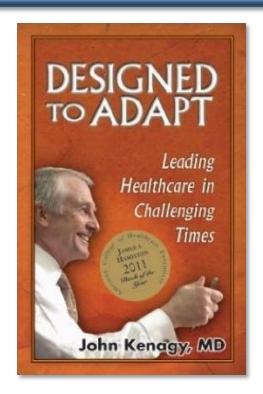
## **Key Takeaways**

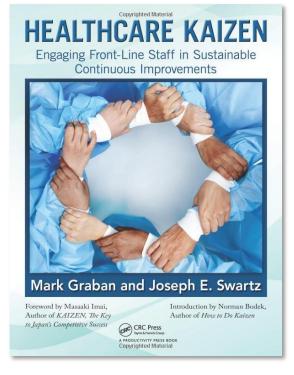
- Frontline Staff are the Experts
- Develop Support Systems
  - Problem solving resources
  - Leadership style and commitment

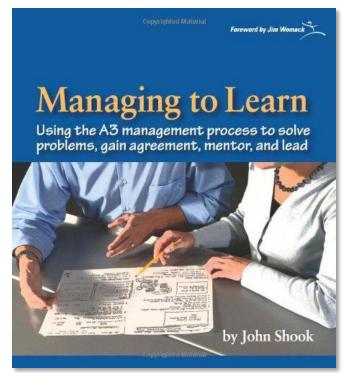




## **Suggested Readings**



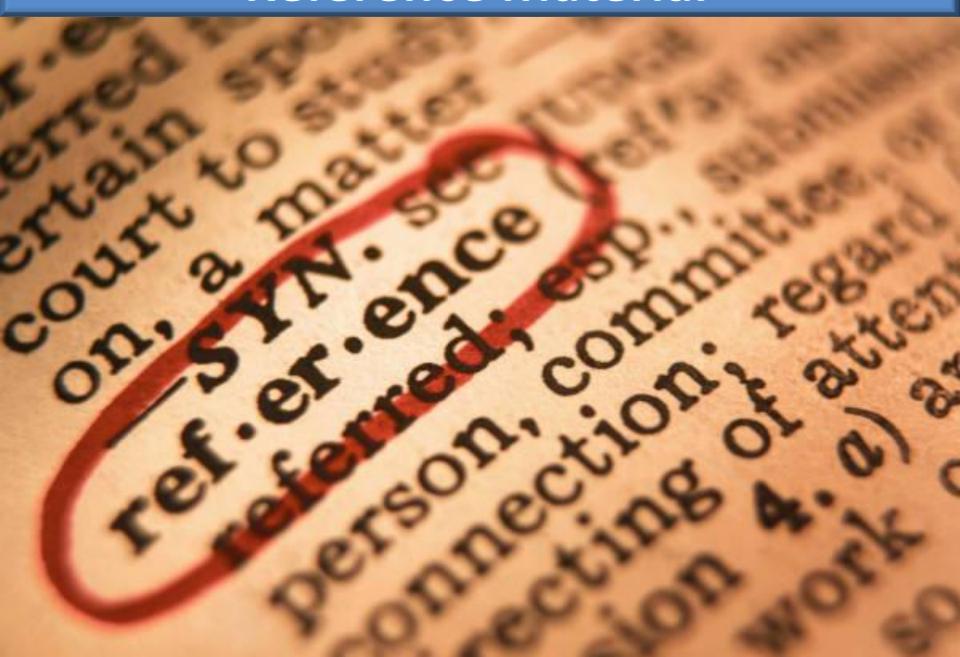




## **Questions?**



# **Reference Material**



## **Sample Direct Observation**

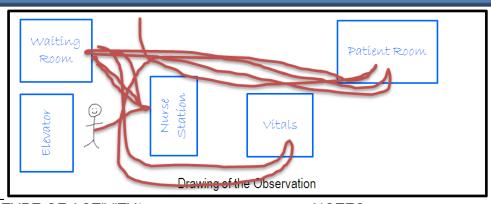
Childre Hospit	OBSERVATION RECORD
Activity.	OPS Patient Flow

Person Observed: Billy E#0123456789

Location: 4th Floor West

Date & Time: 08-23-2013 @ 0630

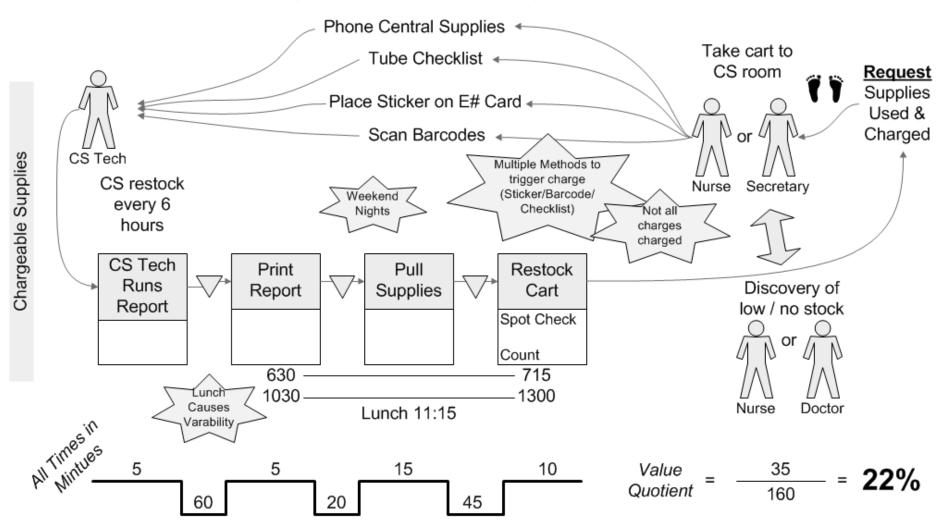
Observer: Isaac Mitchell



TIME	ACTIVITY		TYPE OF ACTIVITY*						<b>/</b> *		NOTES		
		Value Added	Overproduction	Defect/Rework	Inventory	Over-Processing	Transportation	Waiting	Motion	Human Potential			
6:30	Patient Arrives to OPS and Checks In	X											
6:32	Waits in waiting room							X			Room number not assigned		
6:47	vítal Sígns Taken	X											
6:59	Transported to Room						х						
チ:00	PCA completes room orientation												
F:06	Waits							х					
<i>7</i> :32	RN does history	Х											
<b>7:43</b>	Waits							х					
ナ:58	CRNA does history	Х				х					CRNA ask the same questions		
8:07	Waits							х			Delay in OR		
8:46	RN give happy juice										-		
8:48	Waits	Х									Long wait after happy juice		
0.00													

## Sample Value Stream Map

### Central Line / Airway Cart Restocking: Current State



## Sample A3

### A3 Problem Solving

Title: Central Line / Airway Cart Restocking

#### Issue

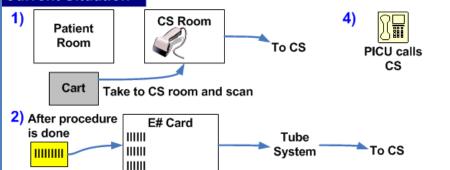
There are multiple ways of charging for stock items for CVL/Airway Cart

### Background

The is only 1 Airway and 1 CVL Cart in PICU for 14 rooms

If this cart runs out of stock there is not stock in the PICU for our patients.

### **Current Situation**



### **Problem Analysis**

Item

Item

Item

Sticker

Why are there 4 ways to charge?

Checklist

Qty

Qty

Qty

Why? Different units have different processes (PICU/NICU/Clinic).

Tube

System —

Why? The process not standardized.

Why? Different units have special requirements.

Why? Preferred method not used by all staff.

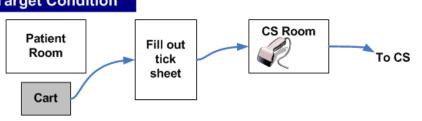
Why? Staff not trained on preferred method/process.

Why? Staff may not know about the preferred method/process.

To CS

Date: 11/28/11 Owner(s): Vickie H., Bill C., Rhonda H., Joe P.

### **Target Condition**



#### Countermeasure

- 1) Standardize process barcode scanning of tick sheet
- 2) Train PICU staff of new process

### Implementation Plan

What Who When Outcome

Create Tick Sheet Vickie H. 1/1/12 to 1/15/12 Standard form create to have 1 way to record

charge items.

Educate Staff in use Bill C. 1/15/12 to 1/31/12 Staff only use tick sheet to charge

Cost/Benefit/Recognition Cost

Material Capture more charges / prevent lost charges

Time to train Supplies available when needed

New system in other areas \$\$ Standard process reduces training time for new

staff

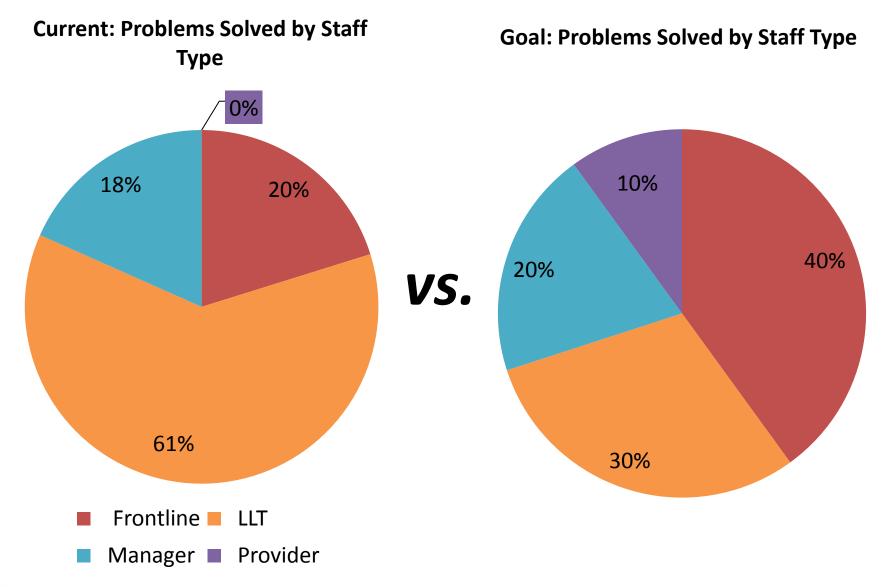
### Test

Test for 2 weeks. Implement for all PICU patients. Compare lost charges and staff satisfaction.

### Follow-up

Survey if outcomes are achieved

## **Current Condition vs. Target**



## **A3 Problem Solving**

### A3 Problem Solving

90%

90% 70%

50%

40%

20%

20% 10%

Title: Problem Solving by Frontline Staff

Date: 6/20/13

Owner: Isaac Mitchell **Target Condition** 

To: Administration Total % Frontline Staff Involved

with Problem Solving

FY13 Goal



% Problem Solved by Staff Type

Manager

20%

FY15 Goal

use of staff

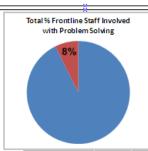
Issue

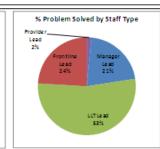
Low participation of frontline staff involved in problem solving.

### **Background**

The Ideal Patient Care model started in November 2011 with the intent to engage frontline staff "the experts" in 2<sup>nd</sup> Crder (Root Cause) problem solving. Managers and LLTs currently the majority of the people problem solving.

### **Current Situation**





Problems Solved by Department										
Department	PICU	ED	Lab	Radiology	NICU					
Start Date	Nov. 11	July 12	July 12	July 12	March 13					
FTEs	42	81	57	41	168					
<b>Problems Solved</b>	45	31	24	19	14					
Provider Lead	1	1	0	0	0					
Manager Lead	7	8	8	3	2					
LLT Lead	27	12	10	13	9					
Frontline Lead	10	10	6	3	3					
			Last	Revision:	7/1/2013					

### **Problem Analysis**

Why are frontline staff not involved in problem solving?

- 1) No time for problem solving
  - 1.1) Primary job takes priority (No Action)
  - 1.2) No scheduled time for problem solving.
    - 1.2.1) Low staffing levels because of vacant open positions (No Action)

  - 1.2.2) No formal budgeted time for problem solving (Root Cause)
- Not a priority for staff
  - 2.1) Staff unsure which hospital initiative is most important (Root Cause)
  - 2.2) No expectation, encouragement, & visual support from leaders to solve problems
    - 2.2.1) Manager unsure of Lean leader/manager role (Root Cause)
- Staff not comfortable problem solving
  - 3.1) Not trained in A3 problem solving (In Progress)
  - 3.1.1) Staff unsure of the benefit of the Ideal Patient Care model (Root Cause)
  - 3.2) Internal training not effective
    - 3.2.1) Staff unsure of the benefit of the Ideal Patient Care model (Root Cause)
  - 3.3) Staff worried about backlash from peers (Root Cause)
  - 3.3.1) Manager unsure of Lean leader/manager role (Root Cause)
  - 3.4) Staff worried about backlash from manager/supervisor
  - 3.4.1) Manager unsure of Lean leader/manager role (Root Cause)

### Countermeasure

- \$1.2.2) Create Kronos clock code for Ideal Patient Care problem solving tracking.
- 2.1) Evaluate hospital initiatives and create a common Mission / Vision / Goals.
- 2.2.1, 3.3.1, 3.4.1) Create manager/leadership specific Lean training.
- 3.1.1, 3.2.1) Evaluate and modify current training method and model.

### Implementation Plan

Develop proposed training modifications

5) Present to IPC leadership for feedback

	What	Who	When	<u>Benefit</u>
	1.2.2:  1) Establish Kronos clock code 2) Establish IPC project status process 3) Educate staff and managers on process 4) Evaluate need for IPC budget 2.1:	L.Hawkins I.Mitchell, IPC Managers I.Mitchell, Unit Educators I.Mitchell, Z.Goodrich, L. Barnes	July '13	Provides staff time for improvements and increases involvement.
,	Identify hospital initiatives     Develop committee to identify relationships     Make recommendations on shared vision/mission     Present recommendations to Administration     Administration evaluates recommendations and	I.Mitchell, J.Chambers I.Mitchell Committee Committee Administration	Nov '13	Creates common vision and goals
	communicates to hospital employees 2.2.1, 3.3.1, 3.4.1: 1) Develop training material 2) Establish requirements 3) Schedule courses 3.1.1, 3.2.1:	I.Mitchell, J.Chambers, S.Wilburn, I.Mitchell, S.Wilburn, R. McKinley I.Mitchell, ODL	Nov. '13	Give leaders the tools and expectations to manage an empowered employee
	Review current course evaluations     Review related Press Ganey questions     Si Establish a baseline metrics	I.Mitchell, K.Campbell I.Mitchell, J.Chambers I.Mitchell, J.Chambers	Aug '13	More effective training and

I.Mitchell, J.Chambers

I.Mitchell, J.Chambers

#### Test evaluate.

Radiology.

1.2.2) Test Ideal Patient Care Kronos clock code for one year and 2.1) N/A 2.2.1, 3.3.1, 3.4.1) Test leasership training and standard work in the PICU/ 3.1.1, 3.2.1) Test modified training on 2<sup>nd</sup> Floor/2<sup>nd</sup> Clinic group for three month period.

### Follow-up

Evaluate Percentage Frontline Staff Involved, Type of Staff Problem Solving, Course Evaluations, and Press Ganey Scores. December 2013 timing.

## **Obtaining Our Target Condition**

### **Problem Analysis**

Why are frontline staff not involved in problem solving?

- 1) No time for problem solving
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  - 1.2) No scheduled time for problem solving.
    - 1.2.1) Low staffing levels because of vacant open positions (No Action)
    - 4 1.2.2) No formal budgeted time for problem solving (Root Cause)
- 2) Not a priority for staff
  - 2.1) Staff unsure which hospital initiative is most important (Root Cause)
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    - 3.3.1) Manager unsure of Lean leader/manager role (Root Cause)
  - 3.4) Staff worried about backlash from manager/supervisor
    - 3.4.1) Manager unsure of Lean leader/manager role (Root Cause)

### Countermeasure

- 1.2.2) Create Kronos clock code for Ideal Patient Care problem solving tracking.
- 2.1) Evaluate hospital initiatives and create a common Mission / Vision / Goals.
- 2.2.1, 3.3.1, 3.4.1) Create manager/leadership specific Lean training.
- 3.1.1, 3.2.1) Evaluate and modify current training method and model.