

A Better Discharge Process: Using Lean Six Sigma and Multidisciplinary Collaboration to Improve Patients' Experience:

A Love Story



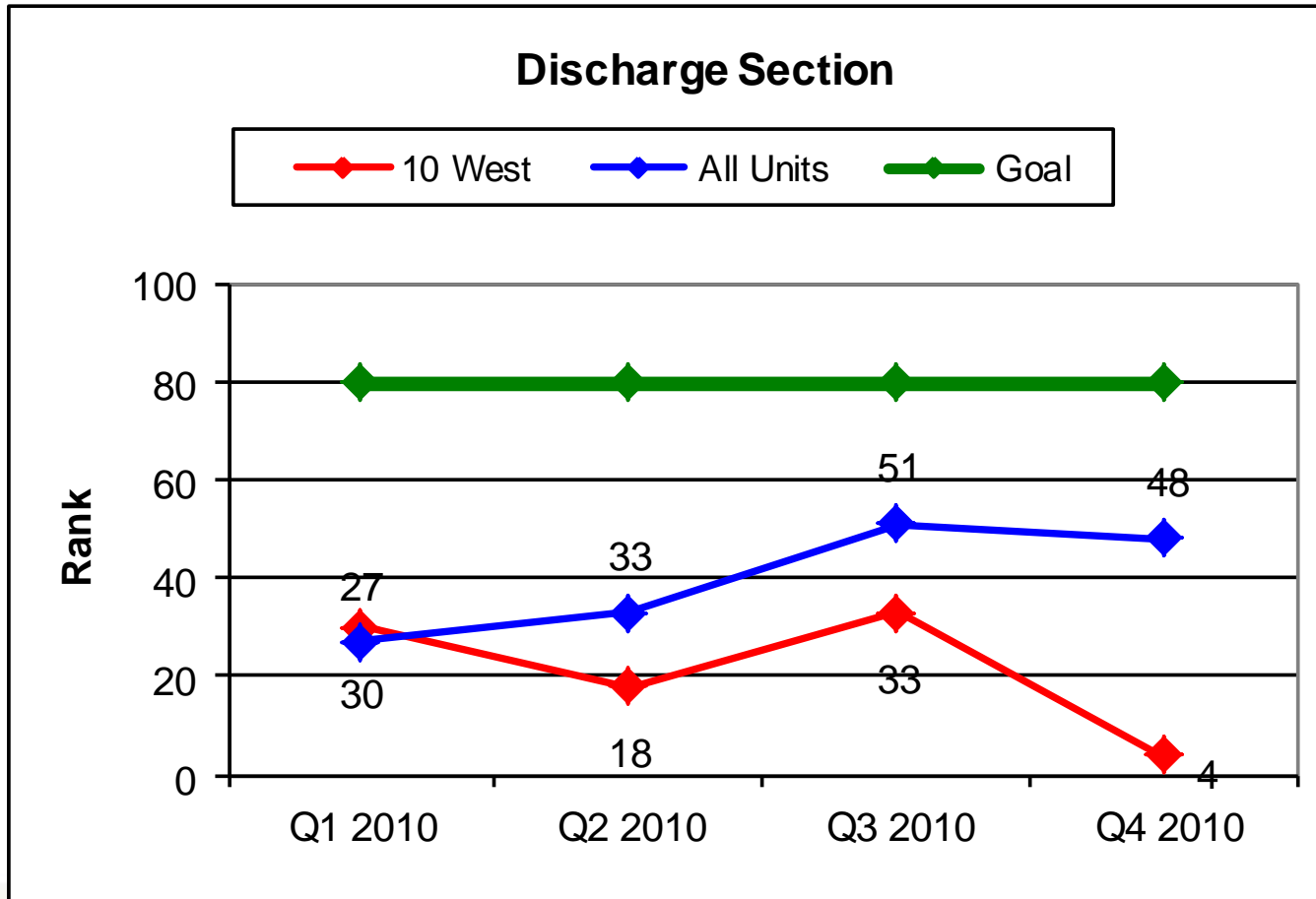
Mike Sawin, BSN, RN
Nurse Manager 10W

Stephanie Sargent , MHA, RN, Lean Six Sigma Green Belt
Performance Improvement Facilitator

- **Medical University of SC (MUSC) Charleston, SC**
 - Established in 1824
 - First Medical College in the South
- **Academic Medical Center**
 - **709 beds**
 - **Six facilities**
 - Medical University Hospital
 - Ashley River Tower
 - Children's Hospital
 - Storm Eye Institute
 - Institute of Psychiatry
 - Hollings Cancer Center
 - **11 Service Lines**
 - **Over 11,000 MUSC employees including the University staff**
 - **895 physicians & 617 residents**



Where We Were



INPATIENT REPORT

Filter Definition

Filter	Choice(s)
Received Date	From 04/01/2010 To 06/18/2010
Unit	10 West

Benchmarking Definition

Benchmarking Period	03/01/2010 To 05/31/2010
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Question Analysis

All Respondents

Section Question	Mean	n	All PG DB		Teaching Group	
			Mean	Rank	Mean	Rank
Std Discharge	78.9	45	84.5	4	82.8	6
Discharge	79.2	45				
Extent felt ready discharge	78.3	45	85.8	2	84.5	4
Speed of discharge process	78.3	45	81.8	18	79.4	35
Instructions care at home	79.6	44	86.6	2	85.3	4
Help arranging home care services [†]	75.0	22	85.3	2	84.0	5

Results:

- Avatar - “timely discharge process”
 - **94% positive** (89% strongly agree)
- HCAHPS - Discharge Composite
 - **93% top box** (98th percentile) for FY2011
- **No more** survey comments that patients did not feel ready for discharge

Why Discharge Process?

April 2010 Senior Hospital Administration identified the discharge process as a priority

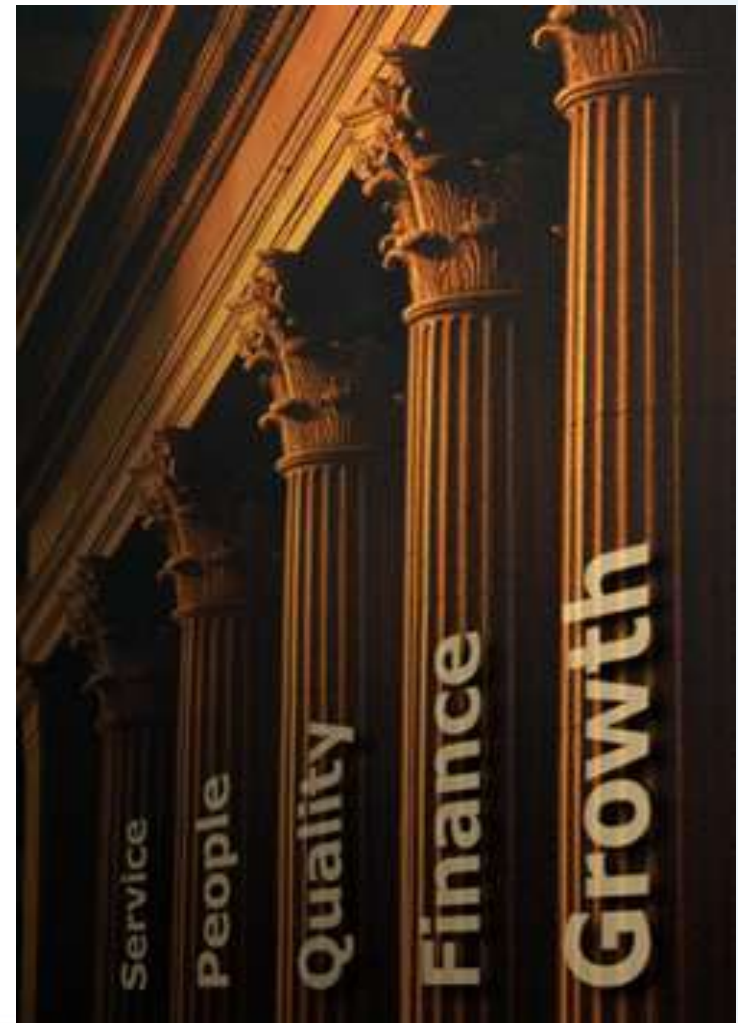
- Voice of the patient – lowest scoring section on Press Ganey Surveys
- Patients boarding in the ED and PACU
- Routinely on “critical” census alert

Why 10 West?

- 10W had lowest patient satisfaction scores on discharge
- Very complex patient population with extensive discharge needs
- Discharge requires multiple interdisciplinary teams

History of Project

- **Focused on 3 Pillars:**
 - **Service**
 - **Finance**
 - **Growth**



History of Project

- MUSC trained 20 employees on Lean Six Sigma for Green Belt certification
 - Performance Improvement Facilitators
 - Administrative Managers
 - Service Line Business Managers



IMPROVE

I

IDENTIFY the Problem

M

MEASURE the Impact

P

PROBLEM Analysis

R

REMEDY Selection

O

OPERATIONALIZE the Remedies

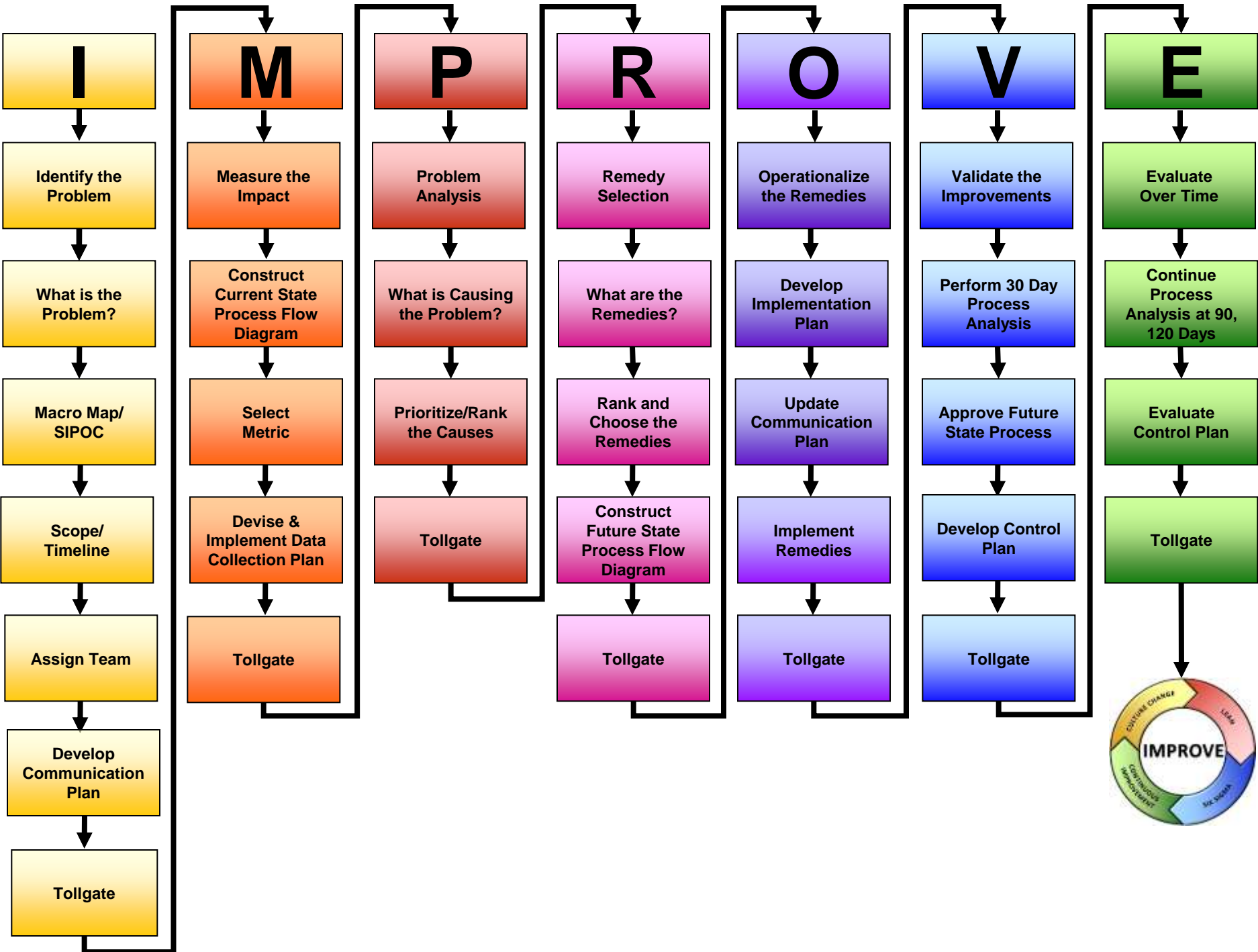
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VALIDATE the Improvements

E

EVALUATE Over Time

Changing What's Possible.



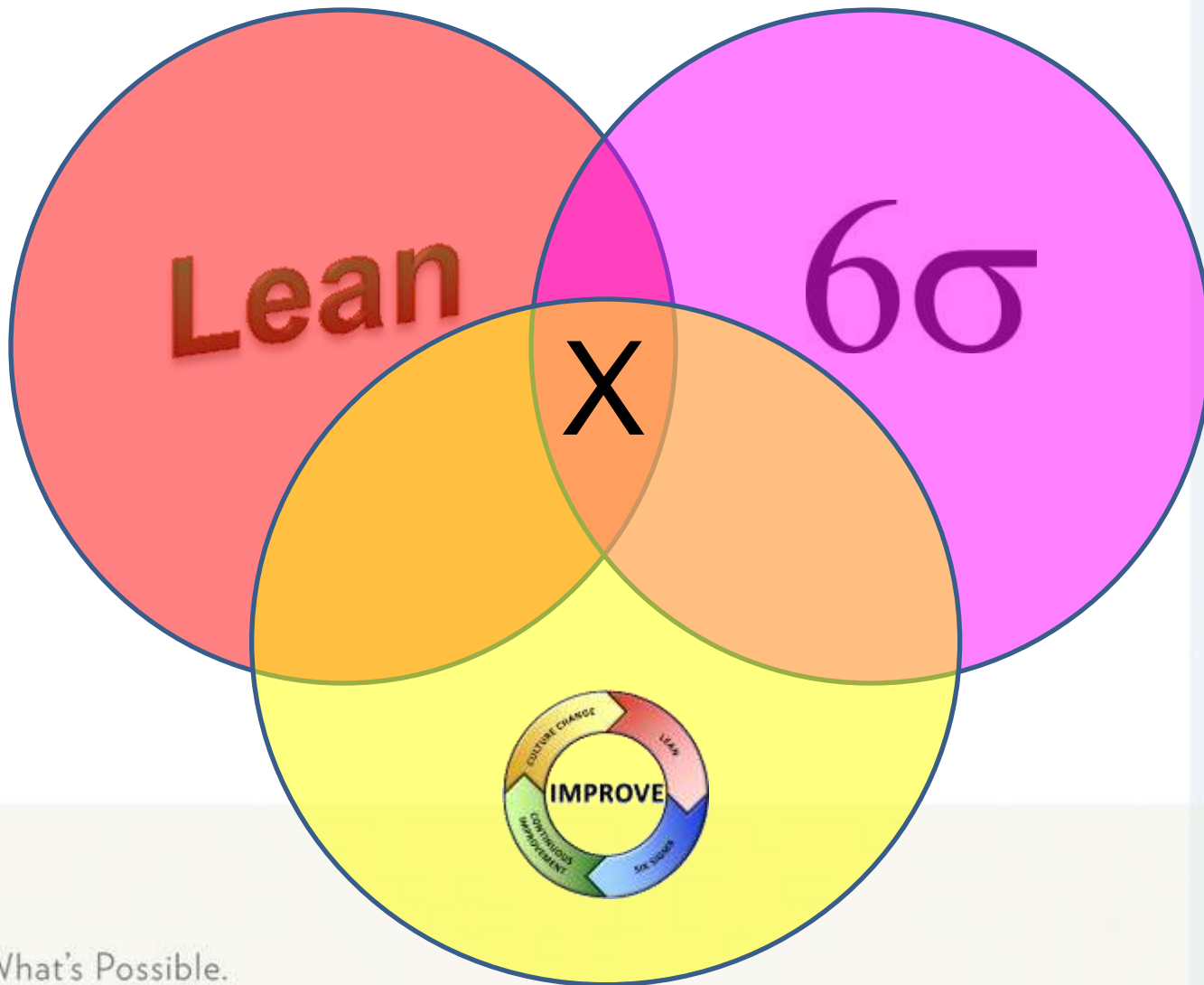
LEAN

- ↓waste, ↑efficiency
- Removing non-value added activities
- Mistake Proofing
- Standard work

6σ

- Reducing variation
- Reducing defects
- Increasing quality

Combined Methodologies



Changing What's Possible.

Key Win for the Organization

- First application of Lean Six Sigma at MUSC
- Success of this project paved the way for organizational buy-in of Lean Six Sigma



The Journey

- In the beginning...
- Overcoming personal bias
- Stephanie Sargent and Rob Finch



IMPROVE

I

IDENTIFY THE PROBLEM

- From the **time** that the physician writes the discharge order until the patient leaves is **245 minutes**
- **Patient satisfaction** scores are in the **18th percentile** on the “Speed of the Discharge Process” and below goal

The Team

- Mike Sawin, Nurse Manager for 10W
- Kathy Sloan, Nurse Case Manager, Orthopaedics
- Florence Simmons, Nurse Case Manager, Trauma
- Christa Schaff, Social Worker, 10W
- 10W staff included:
 - Karen Boyd, RN, CUL
 - Jessica Stout, RN, CUL
 - Gayle Wadford, RN, Charge nurse
 - Allison Swingle, RN
 - Deborah Joseph, Unit Secretary
 - Roxanne Cuzzell, Unit Secretary
- Facilitators:
 - Stephanie Sargent, MHA, RN, Lean Six Sigma Green Belt
 - Rob Finch, MHA, Radiology Supervisor, Lean Six Sigma Green Belt



**Everyone's involvement
was key to the process!**

Additional Team Members

- Physician Assistants from Orthopaedics and Trauma
- Physical, Occupational, and Speech Therapists
- Attending Physicians were routinely updated

IMPROVE

M

MEASURE THE IMPACT

- Decrease the **average lead time**:
245 ⇨ 105 minutes
- Improve **patient satisfaction**:
18th ⇨ 65th percentile
by 12/31/11

IMPROVE

P

PROBLEM ANALYSIS

- Clinical and Non-Clinical not working together
- Nurses' attitudes about discharge
- Physicians' attitudes about discharge
- Keeping everyone "open-minded"
- The number of variables affecting the discharge
- Creating a team "atmosphere" on the unit

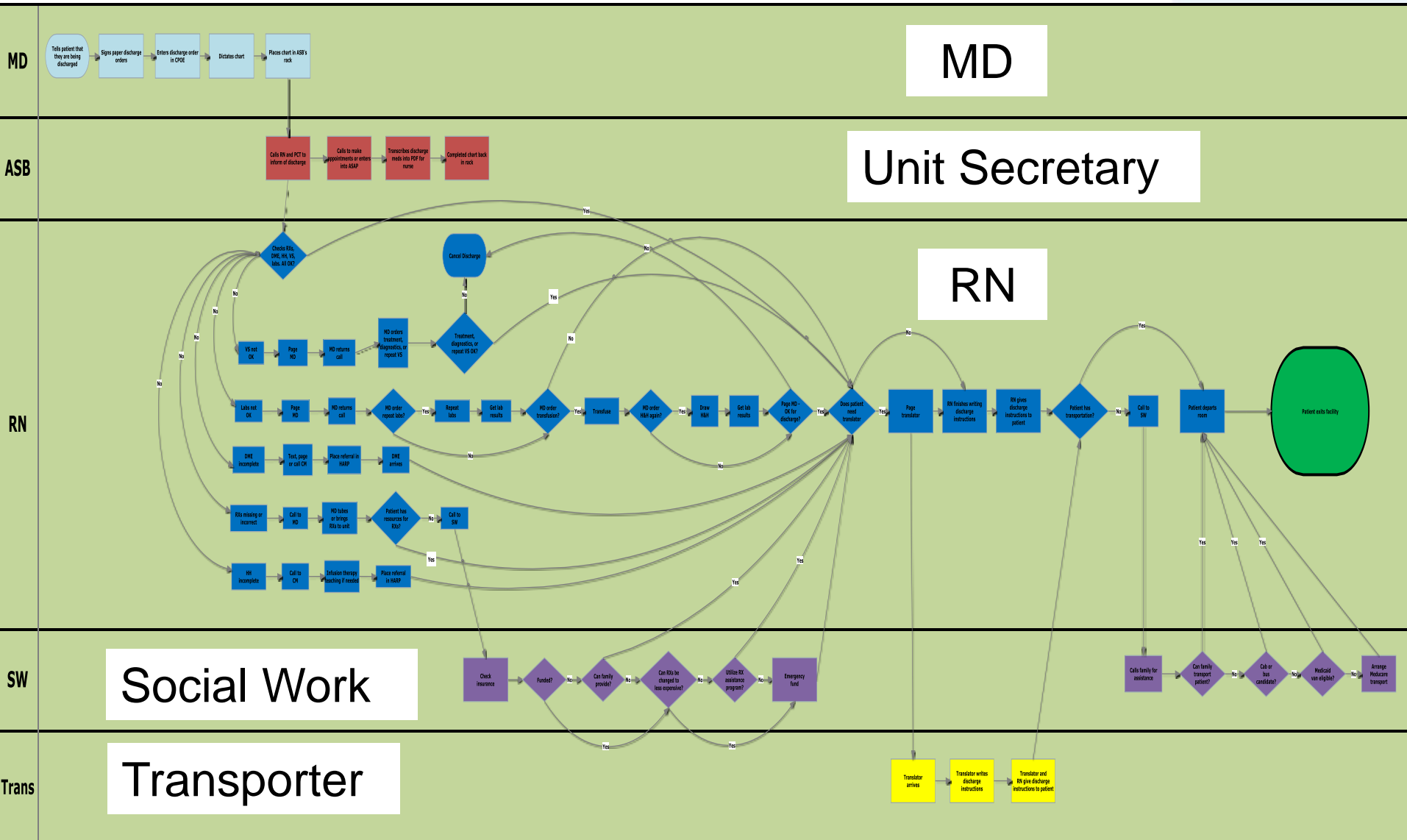
IMPROVE

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PROBLEM ANALYSIS

- Transportation issues on the day of discharge
- Prescription issues on the day of discharge
- Appointment scheduling was time consuming

Swim Lane



Changing What's Possible.

IMPROVE

R

REMEDY SELECTION

- All Vital Signs and labs
 - ✓ due at 0600
- Implemented computerized ASAP
 - ✓ (computerized discharge appointments)
- Physicians, Residents and Physician Assistants
 - ✓ identify appointment needs the day before discharge

Unit Mgr.: MIKE SAWIN 2-2858/ 13099
 Unit Edu.:

10W

TRAUMA: ATTENDING: 6-6621
 RESIDENT: 6-662
 INTERN: 6-6625
 HOSPITALIST: 2-0082

Charge Nurse: 6-6601 / 2-1980

	Room#	Name	DC	Attending/Service	Nurse		Tech	
					DAY	NIGHT	DAY	NIGHT
!	1052 ♡			Neuro				8
H	1053			Ortho				
I	1054		D+2	Ortho	53, 59, 65, 66			59-66 = 23
G	1055		D+1	Trauma				
H	1056 ●			Gen Surg				10
H	1058 ●			Gen. Surg.				
F	1059 ○		D+1	Trauma	54, 56, 58, 67			67-72
A	1060		D+1	Trauma				
L	1064		D+1	Ortho				12
L	1065			Trauma				
L	1066		D+1	Trauma	70, 71, 72, 73			73, 76-79
L	1067 ♡			PMV Hosp				
R	1068 ♡		D+1	Gen-SX				14
I	1070		D+1	Ortho				
S	1071		D	Ortho	68, 76-79			52-58 / -53
S	1072		-	Ortho				
K	1073		D+1	Ortho				
!	1076			Trauma				
!	1077			Gen-SX	52, 55, 60, 64			1059
!	1078 ●		D+3	Ortho				
	1079		OR	Ortho				
					OHG			

Changing What's Possible.

IMPROVE

R

REMEDY SELECTION

- Organized Care Team Meetings:
 - Orthopaedics - daily at 1000
 - ✓ NCM, SW, CUL or Charge Nurse, PA and Intern
 - ✓ Added discussion of their needs and potential discharge dates
 - Trauma - Twice a week at 1030
 - ✓ NCM, SW, CUL or Charge Nurse and PA

IMPROVE

R REMEDY SELECTION

- Lovenox teaching
 - ✓ Started on the first dose
- Nursing home and rehab packets
 - ✓ Started upon admission
- NCM/SW notified early
 - ✓ Transportation and medication funding issues

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R

REMEDY SELECTION

✓ Durable Medical Equipment



Changing What's Possible.

Possible Discharge Date:

9/30/11

Discharge Time:

12 PM

Discharge Ride:

Husband

Name:

Mike

Phone Number:

[REDACTED]

Goals for Discharge:

Education: Lovenox
injections
Physical Therapy:

Other:

- PT Clearance -
- Ambulate 100 feet
- Tolerate regular diet
- Pain Control
- Return of bowel function

Discharge Needs:

Services: Home health
PT

Equipment: Walker

Sliding board

Medication:

Lovenox

Other:

- Social Work
- Prescription/Financial

Anticipated Discharge Date/Time:

- Patient belongings in safe Home meds in narcotic box

Discharge Disposition

- Home without services** **Home with services**

Home Health: Nursing PT OT Speech Home Aide

Referral Placed: Yes No

Orders need to be faxed: Yes No If yes, fax # _____

Hospice: Referral placed Yes No

Orders need to be faxed: Yes No If yes, fax # _____

DME: Referral placed Yes No Patient to obtain

Equipment delivered Yes No

IV Infusion: TPN ABXs IVFs

Referral placed Yes No

Orders need to be faxed: Yes No If yes, fax # _____

Education completed Yes No

Meds to be delivered to hospital Meds to be delivered to home

Skilled Care Facility: Name _____

Number for report: _____

PPD placed: Yes No PPD read: Yes No

Packet initiated: Yes No Packet completed: Yes No

Transport Private Car Ambulance Pick up time: _____

Acute Inpatient Rehabilitation: Name _____

Number for report: _____

Packet initiated: Yes No Packet completed: Yes No

Transport Private Car Ambulance Pick up time: _____

Hospital LTAC IOP Name: _____

Number for report: _____

Packet initiated: Yes No Packet completed: Yes No

Transport Private Car Ambulance Pick up time: _____

Out of town discharge: Transport Private car Airplane

Pick up time: _____

CD of films Narcotic prescription filled Given copy of discharge summary / other chart materials

Active duty military: CD of films Given copy of discharge summary / other chart materials

Veteran: Given copy of discharge summary / other chart materials

Jail Infirmary

Packet initiated: Yes No Packet completed: Yes No

Prescription for meds (no oxycodone or oxycontin)

Special Discharge Needs

Medications

Lovenox: Education provided Injection return demonstration
 Pharmacy education for anticoagulation Has Lovenox education kit
 Lovenox prescription on chart Social worker completing indigent application; will pick up Lovenox from Pharmacy Lovenox in room

Coumadin: Dietary education Pharmacy education
 Given copy of booklet

Other Medications

Collar: Miami Aspen Education provided DC booklet Extra pads

Brace – Type: _____ Education provided

Cast **Splint** **Halo** **External Fixator:** Education provided

Drains Flush education Given copy drain record

Foley Leg bag education

Ostomy Care Wound care Nurse Education provided

DC supplies in room

Wound care: Patient/Family education provided

Home wound vac delivered

Feeding tube: Education provided

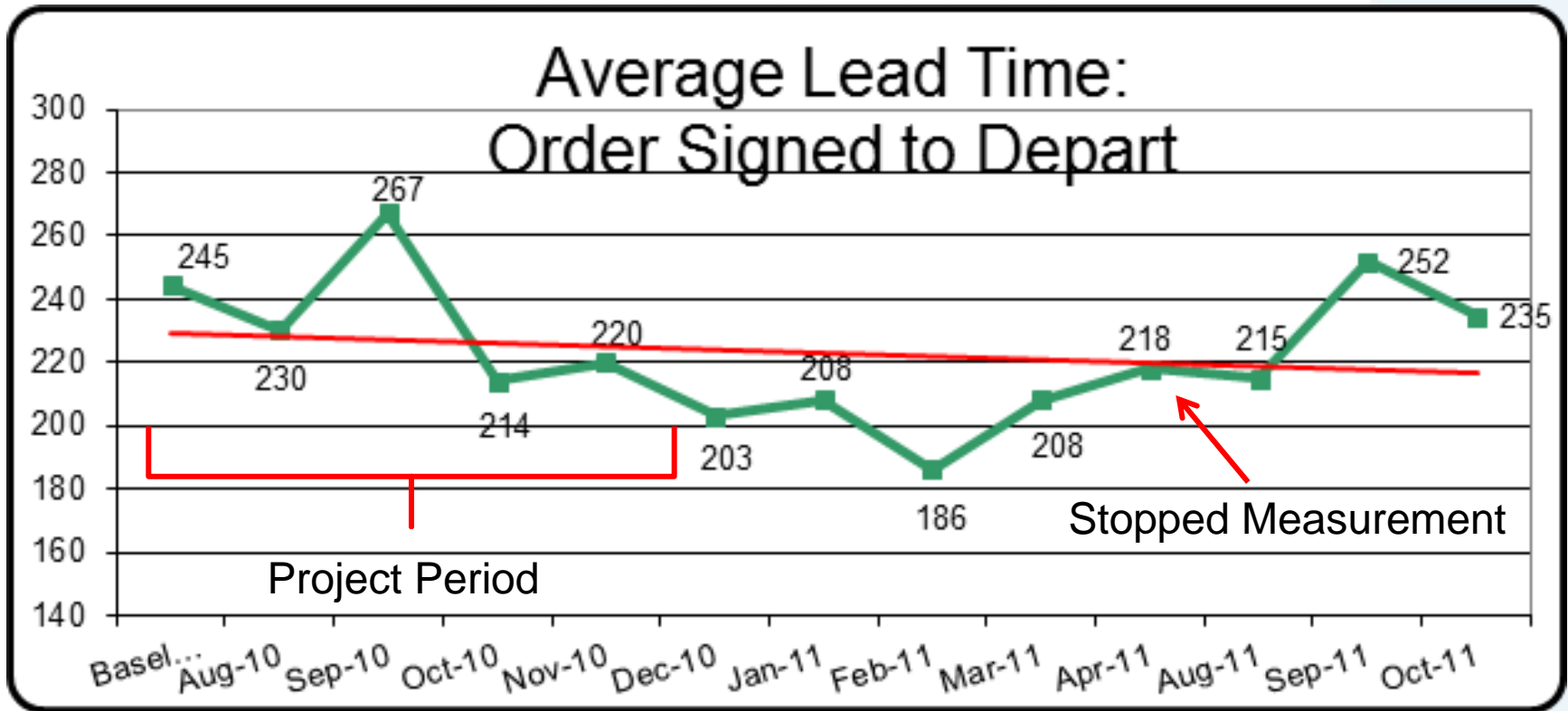
IMPROVE

O

OPERATIONALIZE

- Implementation Plan
 - Who?
 - What?
 - How?
 - When?

IMPROVE



IMPROVE

E EVALUATE

Change in the culture

- ❖ No longer an afterthought
- ❖ Part of the plan of care beginning at admission
- ❖ As important as medicating pain

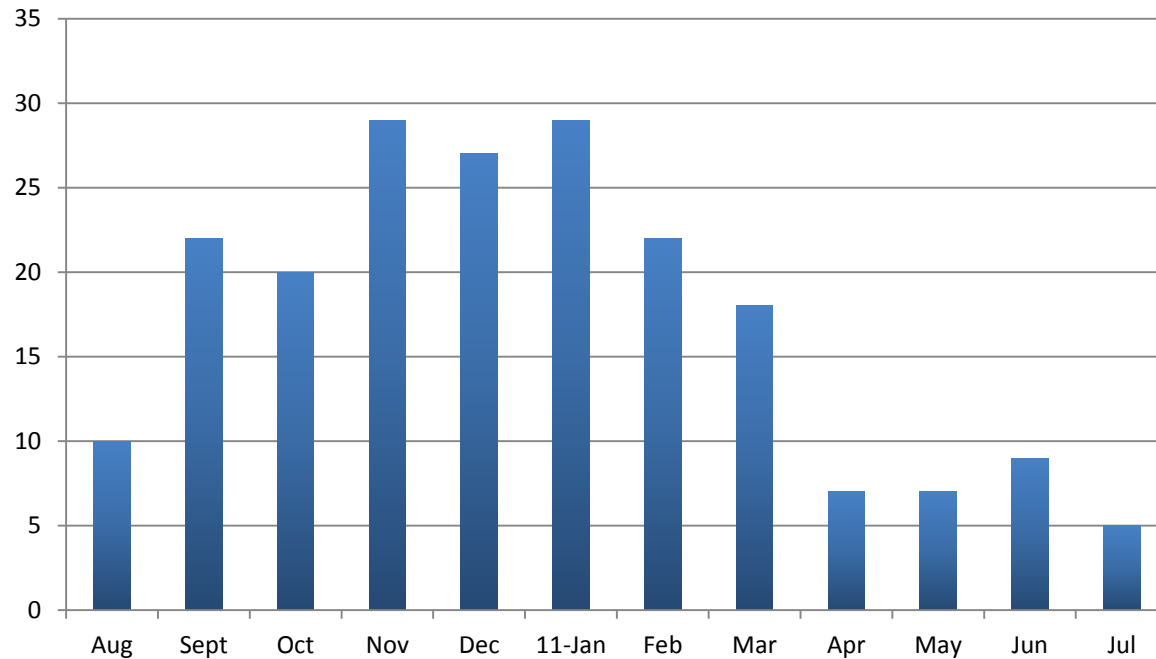
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E EVALUATE

- Improved employee satisfaction- especially with engagement (11.1 point mean score increase)
- Patient satisfaction scores high despite lead time



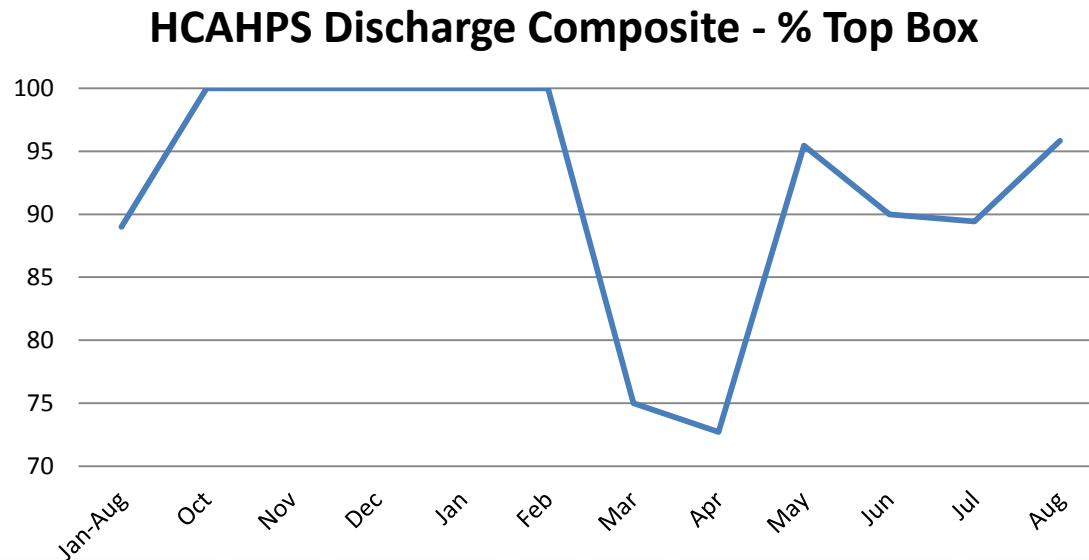
Percent of patients reached with D/C Phone calls who had questions about their discharge instructions



August 2010 – July 2011

Lessons Learned

- Continue to communicate
- Continue to emphasize Physicians' discussing discharge earlier in the patient's hospitalization



Tactics

- Communication (visual cues)
- Checklists
- Standardization of care
- Continuous monitoring of process
 - Data
 - Patient perceptions

Summary

- Voice of customer
- Proactive vs. Reactive
 - Passive recipient to active participant
- Everyone working in the process present
 - Solutions are owned by stakeholders
- Lean Six Sigma applicable to healthcare
 - All units have a discharge project now
- Patient satisfaction scores remain high despite lead time



Changing What's Possible.

QUESTIONS

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