Problem Solving Case Study Using Value Stream Mapping

6A Admissions and Discharges

University of Michigan Health System
Anthony Chiodo, MD, MBA
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Session Outline: 6A Admissions Project
A3 Problem-Solving Case Study

1. Define the problem: Background, Current situation and Goal
2. Analyze the problem
3. Identify improvement options and state why you chose the option selected
4. Improvement planning and implementation
5. Evaluation of improvement activities
6. Sustain plan/next steps
Clearly a PDCA continuous improvement cycle
Present state and future state assessment through Value Stream Mapping: P
Implement Future State: D
Continuous highly visual data analysis: C
Analyze opportunities for further improvement: A
Continuous re-evaluation to refine the process
Reason to Target Problem

- Patient dissatisfaction
- Staff dissatisfaction
- Reimbursement issues
- Payor demand issues
- Improve cost of providing the same care
- Unify care management
- Improve the flow through health problem management
- Improve patient outcomes
Reasons to Use Lean

- Other management driven change systems have been ineffective
- People doing the job are best able to identify the current state and its deficiencies
- People doing the job are best able to identify reasonable solutions
- Ownership of the process by those who can best impact its effectiveness
What is Needed to Use Lean

• Culture support
  – Do we just improve managerial processes?
  – Do we tackle health care management processes?
  – Can we handle the pink elephants?

• Management support

• Time resources

• IT resources
Key Principles of Lean

- Standardized processes
- Value from a customer perspective
- Identify the value stream for each process
- Make value flow without interruptions
- Let the customer pull value from the producer
- Pursue perfection: First time quality
- Highly visible process
- Small pilots that are widely distributed
Defining the problem

- SIPOC analysis
  - Suppliers, inputs, processes, outputs, customers
- Fishbone (Ishikawa): the five “whys”
  - Methods, machines, people, materials, measurement, environment
- Gemba
- Value Stream Mapping
Why is this Critical?

- Who takes part in the Value Stream Mapping Process?
- Identifying the scope of the analysis
- Identifying the administrative owners of the process
Value Stream Mapping

- First Time Quality
- Time in Process
- Waste analysis
Definitions of Waste

• Transport
• Inventory
• Motion
• Waiting
• Over-production
• Over-processing
• Defects
• Skills: under-utilizing, inadequate
# A3: Define the Problem

1. Define the problem

2. Analyze the problem

3. Identify improvement options and state why you chose the option selected

4. Improvement planning and implementation

5, 6. Evaluation of improvement activities, Sustain plan and next steps
A3: Defining the Problem

Problem
Staff planning retreat: *Fix the admission process!!*

Symptoms
- Patients admitted too late to receive therapy on the day of arrival
- Delays cause team members to blame each other, become burned out and frustrated, perceive that they have little control
- Staff overtime
- Loss of reimbursement (see next page)
- Congestion in other parts of the hospital

Histogram of Arrival Time

- Too late to receive therapy
- Actual Median Arrival Time = 4:45 pm

Deviation = 3 hours, 45 mins
Results in patients not receiving therapy
This is the problem

Standard = 1 pm arrival to ensure time to receive therapy on the day of admission
# Patient Demographics, Financial Effects

## 6A Analysis - FY07 Data

<table>
<thead>
<tr>
<th>Metric</th>
<th>Value</th>
<th>Unit</th>
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<tbody>
<tr>
<td>Inpatients per year</td>
<td>549</td>
<td></td>
</tr>
<tr>
<td>Patient days per year</td>
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<td></td>
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<tr>
<td>ALOS</td>
<td>18.1</td>
<td></td>
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<tr>
<td>Average occupancy</td>
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<td></td>
</tr>
<tr>
<td>Beds</td>
<td>32</td>
<td></td>
</tr>
<tr>
<td>Occupancy %</td>
<td>85.0%</td>
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</table>

### Payer Mix:
- Medicare: 31% per case
- Blue Cross: 26% per diem
- Mcare: 3% per diem
- Medicaid: 10% per diem
- Commercial: 30% percent of charges

| Therapy charges per patient day | $600 |

<table>
<thead>
<tr>
<th>Patients moved earlier in day:</th>
<th>20%</th>
<th>40%</th>
<th>60%</th>
<th>80%</th>
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</thead>
<tbody>
<tr>
<td>If we get reimbursed an added day of therapy:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Patients impacted/year</td>
<td>110</td>
<td>220</td>
<td>329</td>
<td>439</td>
</tr>
<tr>
<td>Commercial share</td>
<td>33</td>
<td>66</td>
<td>99</td>
<td>132</td>
</tr>
<tr>
<td>Charge per day</td>
<td>$600</td>
<td>$600</td>
<td>$600</td>
<td>$600</td>
</tr>
<tr>
<td>Collection rate</td>
<td>75%</td>
<td>75%</td>
<td>75%</td>
<td>75%</td>
</tr>
</tbody>
</table>

| Net revenue generated           | 14,823 | 29,646 | 44,469 | 59,292 |
Current Situation: 6A Admission Timeline

Current State

Day before: PMR Consulting
Resident rounds on patient

Patient arrives on 6A

Current State Data source: 6A Admissions
from 10/26-11/16/07, n = 43 admissions
Know the Difference Between Problems, Symptoms and Causes

Invisible, complex Admission process

Cause leads to problem

Late 6A Admissions

As a result of the problem, Leads to symptoms

Patients do not receive tx

Overtime

Low staff morale
A3: Goals

• Impact Problem with Measurable Target
  
  Actual Median Arrival Time = 4:45 pm

  Deviation = 3 hours, 45 mins
  Results in patients not receiving therapy
  This is the problem

  Standard = 1 pm arrival to ensure time to receive therapy on the day of admission

  70% of patients arrive On 6A by 1 pm
  100% of patients who Arrive receive therapy On the day of admission

• Achievable Timeframe
  – What resources does your team have?
  – Problem-solving experience?
  – Barriers?

  Weaker: In 3-6 months
  Better: “By (Date)”
**A3: Define the Problem**

6A Admission Project   June, 2007   Process Owners: Ed Hurvitz, Doug Duwe   Sponsor: Mike Valdes

**Key observation:** Patients arrive too late to receive therapy on admit day

**Goals:**
1) 70% of patients arrive on 6A by 1 pm
2) 100% of patients who arrive receive therapy on the day of admission

**Analysis**

2. Analyze the problem

3. Identify improvement options and state why you chose the option selected

4. Improvement planning and implementation

5, 6. Evaluation of improvement activities, Sustain plan and next steps
Define the Problem: Nemawashi—Build Consensus and Approval

Most important step

- Team formed
- Met with leadership, suppliers, process participants
- Reviewed data
- Team did the gemba and identified and quantified the waste in the process
Analysis: Data

Medically cleared: 10 am
Insurance cleared: 11:30 am

318 minutes from insurance clearance to arrival on 6A.

What is taking so long?
Gemba Plan

• Team did the gemba
  – Utilization Review Processes, systems
  – Business Office ‘PADding process’
  – 6A Admissions Coordinator Processes
  – Supplying Unit discharging process (4A), timing
  – 6A nursing, medical, clerical processes
  – Rehab scheduling, rehab documentation
  – Interviewed patients, families to determine views on admission process
Analysis: Gemba Findings: Invisible Process, Many Handoffs

Complex process, many handoffs:

Key Observations:
- Many one-way communication flows
- Entire team unaware of status of admission at any given point
- Staff unable to see delays
- Staff may be unaware that admission is waiting for their action
- Excessive rework, unnecessary phone calls, communication loops, delays

549 6A Admissions/yr
- 90% internal to UMHS
- 35% 4A
- 23% 5A
- 15% Trauma Burn
- 10% 4BC
Analysis: What we discovered…

**Theme:** COMPLEX FLOW OF INFORMATION NOT AVAILABLE WHEN NEEDED

→ Delays in all areas indicated that information was not present at time required to achieve desired future state (Unable to PULL)

→ Information came too late, and in non-standard fashion (PUSH at wrong time)
  - Medical clearance
  - Insurance clearance
  - Therapy scheduling
Analysis Leads to Recommendations and Improvement Strategy

• Standardize Key Discharge Milestones
  – Role assignment
  – Timing
    • UR Started day before, clearance by 10 am day of admit
    • Medical Clearance by 9 am
    • Patient arrival by 1 pm
    • Therapy admin on day of admit

• Goals allowed delays to be quantified
  – 6A Bed change process: 150 min
  – Medical clearance: 6A Consulting service: 60 min
  – Assigning new visit # (PAD), UR delays: 45-90 min
  – Discharging unit processes: 75-130 min
  – PT/OT: 24 hr delay!

• Root Cause Analysis re: reasons key milestones cannot be met
Examples of Root Cause Analysis “5-Whys”

1. **Bed Change Processes Requirement:** Day before Admission
2. **Consulting Resident Clearance Requirement:** 9 am day of admission
3. **Utilization Review Requirement:** Start day before admission, complete by 10 am day of admission
4. **Therapy Scheduling:** Scheduled day before admission
Root Cause Analysis: 6A Bed Change Process

Bed Change Delay: 150 minutes

Q: Why is there a delay in getting the bed changes needed for admissions?
A: 6A clinical team unaware of status/demographics of patients on the list of likely admissions. Charge RN makes decision, frequently challenged by medical team.

Q: Why isn’t the clinical team working together and aware of likely admissions?
A: We do not have a standard process in place that communicates likely admissions and assigns accountability and timing for these decisions that gives us enough time to make changes without affecting admissions.

Q: Why don’t we have a standard process in place that sets admission priorities and makes decisions re: bed moves on a timely basis?
A: Because we didn’t realize that this was a key problem area in our admission process.

Countermeasure: Create Medical/Nursing ‘Bus Driver’ team to discuss bed changes the afternoon before admission, admission coord to communicate likely admissions the day before admission
Root Cause Analysis: Delays in PMR Consulting Service Medical Clearance

Median clearance time: 10 am, range 7 am to 3 pm

Q: Why is the clearance time delayed, with such variability?
A: Because consulting residents have varying responsibilities first thing in the morning

Q: Why do they have varying responsibilities?
A: Because the resident education schedule varies by day of week and no compensation was made to allow for early medical clearance for 6A admissions.

Q: Why was no standard set for early medical clearance?
A: Because we haven’t made this a priority in the consulting resident’s workday and we haven’t organized the resident’s schedules around patient flow.

Q: Why haven’t we organized resident activity around patient flow?
A: Because there wasn’t an understanding of the centrality of this function to patient flow.

Countermeasure: Organize the consulting resident workflow to clear patients by 9 am
Q: Why is there a delay with the UR process?
A1: Sometimes PT/OT notes are not up to date

Q: Why are PT/OT notes not up to date?
A1a: There is no consistent content or timing standard for therapy notes. (Staff are batching the notes at the end of the therapy day)

Q: Why is there no consistent standard?
A: Because the notes weren’t designed for UR needs.

Countermeasure: Redesign PT/OT notes

A1b: Because PT/OT staff don’t know which patients are being considered for 6A admission, so don’t complete their notes when needed

Countermeasure: Create communication system—Make process visible to inpatient PT’s and OT’s (further work to eliminate all batching out of scope for this project).
Root Cause Analysis: UR

UR Delays: 45 Minutes

A2: There is a handoff in UR from the acute service to 6A that affects coordination of benefits

Q: Is the handoff necessary?
A: Countermeasure: No. 6A’s primary referring services can be cohorted and assigned to one UR coordinator.

A3: Because the UR process is dependent upon outside insurance providers response to our requests. They have no incentive to act quickly.

Q: Why don’t we get the verifications in the timeframes that we need them?
A: Because we don’t request early enough—In many cases, we wait until the day of transfer.

Q: Why do we wait so long?
A: Because we didn’t want to process a request that doesn’t result in an admission.

Q: Info need: What proportion of patients don’t go to 6A after insurance is approved? Answer: 3.5%

Q: Is the time invested to verify the insurance worth delaying an admission?
A: No. Countermeasure: Begin insurance verification earlier
Root Cause Analysis: PT/OT Scheduling

**Status:** No PT or OT scheduled on the day of admission

**Q:** Why isn’t PT and OT delivered on the day of 6A admission?

**A:** Because it hasn’t been scheduled.

**Q:** Why hasn’t it been scheduled?

**A:** Because the schedule is completed at 3 pm the day before and scheduling staff are unaware of the admission.

**Q:** Why are they unaware?

**A:** Because we haven’t told them. A consult is written first thing in the morning to schedule the patient for the next day.

**Q:** Why haven’t we told them?

**A:** **Countermeasure:** Include 6A PT/OT schedulers in the group page and potentials email.
Summary: Analysis

Findings
• Information is not available when it is needed by team members
• No timing standards set for completion of admission activities
• Therapy team does not try to schedule therapy on admission day because of delays

Needs:
• Standardize admission activity timing, roles
• Move some activities earlier in process to ensure that there is enough time to complete them
• Improve and standardize communication systems to make process visible
3. Identify improvement options and state why you chose the option selected

4. Improvement planning and implementation

5, 6. Evaluation of improvement activities, Sustain plan and next steps
**A3: Recommendations**

6A Admission Project  June, 2007  
Process Owners: Ed Hurvitz, Doug Duwe  
Sponsor: Mike Valdes

### Background:

- **Key observation:** Patients arrive too late to receive therapy on admit day
- **Goals:**
  1. 70% of patients arrive on 6A by 1 pm
  2. 100% of patients who arrive receive therapy on the day of admission

### Analysis:

#### 6A Admission Delays
- Delays found in all steps of admission process.
- **Biggest delay:** Tx scheduling root cause completed for all delays

### Key points:
- Information is not available when it is needed by team members
- No timing standards set for completion of admission activities
- Therapy team does not try to schedule therapy on admission day because of delays
- **Needs:** Standardize admission activity timing, roles
- Move some activities earlier in process to ensure that there is enough time to complete them

### Recommendations

- **Key Future State Elements:**
  - Eliminated
  - PAD Process

- **Shift Earlier:**
  - UR Process
  - Bed Change
  - Therapy scheduling

- **Improvements:**
  - Communication:
    - "Likely admits" report processes
    - Discharge orders needed
    - Bed change needs

- **Standardized:**
  - Consult Clearance Timing
  - Report processes, timing
  - Communication timing

### Plan

4. Improvement planning and implementation

### Followup

5. 6. Evaluation of improvement activities, Sustain plan and next steps
Measurable objectives
Defined timeframes
Responsibilities identified

Regular ‘touch base’ meetings
Focus—Resources needed to get the work completed
Stay on timeframes—Act quickly
Summary of Key Improvements

Eliminated:
--Business office no longer assigns visit number

Shifted Earlier:
--Utilization Review Process
--6A Bed Changes
--Therapy scheduling

Improvements:
a) Communication:
   --“Likely admits”—Set up day before email, day of paging groups
   --Report processes
   --Discharge orders needed
   --Bed change needs

b) Standardized:
   --Consult Clearance Timing
   --Nursing report processes, content, timing
   --Communication timing, content
Nemawashi

Important to have everyone’s input into solutions, awareness of our progress

Methods:
• Project A3 used as an ongoing tool for communication
• Team meetings: q 2 weeks for deliverables implementation, now q 1 month to look at trends
• Leadership reports
• Email updates with daily admission info to team, leadership, root cause/countermeasure implementation daily
Implementation: Key Learnings

- **Accountability is key**: Set time, activity expectations and standardize behaviors.

- **Formal communication systems** make process more visible (email, pages).

- **To sustain improvement, need to detect ‘normal’ from ‘abnormal’**, then get to root cause **immediately** caused us to change tracking from monthly to daily.
## Sustaining Improvement: Daily Tracking Tool

### Key points:

- **Action**
- **Accountability**
- **Timeframe**
- **Root Cause**
- **Countermeasure**

### 6A Admission Tracking Tool

<table>
<thead>
<tr>
<th>Last Name</th>
<th>First Name</th>
<th>CPI #</th>
<th>Admit Request Date</th>
<th>Admit Date</th>
<th>Insurance Verification</th>
<th>Time UL Cleared</th>
<th>Date Med Cleared</th>
<th>Time Med Cleared</th>
<th>Date Ins Cleared</th>
<th>Time Ins Cleared</th>
<th>Time Arrived on Unit</th>
<th>6A SVC</th>
<th>PT/OT Day of Admit</th>
<th>Current LOC/ SVC</th>
<th>Ins</th>
<th>Root Cause</th>
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<tbody>
<tr>
<td>A</td>
<td>Michael</td>
<td>6</td>
<td>9/9/06</td>
<td>9/10/06</td>
<td>9/10/06</td>
<td>9/10/06</td>
<td>9/10/06</td>
<td>10:20</td>
<td>10:30</td>
<td>14:00</td>
<td>No</td>
<td>5C, SCI</td>
<td>No</td>
<td></td>
<td></td>
<td>BCN</td>
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<tr>
<td>M</td>
<td>Dave</td>
<td>7</td>
<td>9/9/06</td>
<td>9/10/06</td>
<td>9/10/06</td>
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<td>9/10/06</td>
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<td>PT</td>
<td>FT</td>
<td>Genesys</td>
<td></td>
<td>Auto Inf</td>
</tr>
<tr>
<td>A</td>
<td>Susan</td>
<td>5</td>
<td>9/9/06</td>
<td>9/10/06</td>
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<td>PMN</td>
<td>FT</td>
<td>445/456</td>
<td></td>
<td>Medicute AB</td>
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</table>

### Daily Problem-solving Process Workflow:

1. **2:30 pm:** Email tool to Root Cause Leads with request to investigate root cause/MD next steps for any yellow or red areas by end of day.
2. **End of day or first thing next day:** Email out final to Chair, Admin.
3. **Chair, Admin follow up or provide support as necessary.**

4. **Daily Detail and Monthly Trending Reporting:**
6A Admissions Project (December, 2007 workshop)

Admission Project Key Goal: 70% admissions arrive on 6A by 1 pm and receive therapy on day of admission

<table>
<thead>
<tr>
<th>Month</th>
<th>Target</th>
<th>70% Med Clear by 9 am</th>
<th>70% Med Clear by 10 am</th>
<th>70% Ins Clear by 9 am</th>
<th>70% Ins Clear by 10 am</th>
<th>70% PT Arrive by 1 pm</th>
<th>70% % with Therapy</th>
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<tbody>
<tr>
<td>January, 2008</td>
<td>41%</td>
<td>32%</td>
<td>18%</td>
<td>0%</td>
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<tr>
<td>February, 2008</td>
<td>62%</td>
<td>41%</td>
<td>22%</td>
<td>14%</td>
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<tr>
<td>March, 2008</td>
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<td>65%</td>
<td>12%</td>
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<tr>
<td>April, 2008</td>
<td>49%</td>
<td>65%</td>
<td>33%</td>
<td>32%</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>May, 2008</td>
<td>61%</td>
<td>61%</td>
<td>45%</td>
<td>23%</td>
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<tr>
<td>June, 2008</td>
<td>87%</td>
<td>66%</td>
<td>43%</td>
<td>51%</td>
<td></td>
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<tr>
<td>July, 2008</td>
<td>69%</td>
<td>41%</td>
<td>39%</td>
<td>29%</td>
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<td>Aug 1-14, 2008</td>
<td>65%</td>
<td>35%</td>
<td>20%</td>
<td>14%</td>
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<td>47%</td>
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<td>October, 2008</td>
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<td>56%</td>
<td>37%</td>
<td>49%</td>
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<td></td>
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<tr>
<td>November, 2008</td>
<td>81%</td>
<td>73%</td>
<td>35%</td>
<td>68%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>December, 2008</td>
<td>79%</td>
<td>54%</td>
<td>49%</td>
<td>80%</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Trend Analysis: System showed progressive improvement until July, 2008, when we saw sharp declines. Team initiated daily root cause problem-solving system on September 10, with immediate improvement to near June levels. Further improvement seen after work with institutional clerical staff to set priority, timeframes and communication strategies re: timing of discharge orders.

Current issues/barriers: 1) Workload issues are preventing UR from initiating review earlier in process; 2) Subgroup is working to standardize therapy scheduling protocols.
Additional Needs/Next Steps

- Continuous Improvement: “Little Steps”
- Discharge project
- Explore careful roll out throughout institution
**Discharge Project Process**

**Problem:** Average 6A discharge time 2:36 pm, too late to admit patients in time to receive therapy on admission day.

**Discharge Project Key Goal:** 6A will discharge 70% patients by 10 am.

--Workshop 6/08, implemented plan, sustain/CQI mode since April, 2009
Root Causes for Discharge Delays

--Communication:
- Team's activities not centered around DC needs, no visible work to help coordination, family involvement in DC inconsistent.

--Standard work:
- Clear milestones not defined for the discharge process.
- Supplier needs for information or turn around not known (pharmacy, equipment suppliers)
- No target DC time identified to team or to families.
- Room supplies inconsistent, in disarray when patient leaves

--Barriers:
- Insurance authorization for medication
1) Identify and resolve key barriers up front (pharmacy systems, equipment delivery, 5S and, resident availability)

2) Develop time milestones for discharge process, communicate with families/team: "Arrive by 9 for discharge by 10"

3) Assign responsibility and develop standard work processes
   -- Direct to Bedside stocking
   -- Timeframes for work completion

4) Develop daily visible tracking system.

5) Teach root cause problem solving when criteria aren't met and assign responsibility.

6) Develop andon for problems
Andon: Lantern/Signal for help

Two reasons why problems don’t get resolved:
• Andon not activated: We don’t ask for help—Why?
• Our ‘fixes’ don’t address the real problem—we don’t get to root cause when we troubleshoot problems

Frequent reasons for delays:
• Overburden
• Conflicting time issues
• Firefighting because something wasn’t done earlier

Understanding the barriers is the first step to eliminating them.
We Track EVERY Discharge and Actively Look for Problems

--- Goals set for key process milestones
--- Track what happens—measure against goal
--- Root cause for problems
--- Countermeasures address root causes

<table>
<thead>
<tr>
<th>CPI</th>
<th>Initial DIC Date</th>
<th>DIC Day of Week</th>
<th>Actual Discharge Date</th>
<th>Variations in DIC location</th>
<th>Actual DIC location</th>
<th>Time Scripts to Pharmacy</th>
<th>Time MD DIC (Summarize to Clerk)</th>
<th>Time Clerk (notifies RN DC ready)</th>
<th>NSG DIC Process Complete</th>
<th>Procedure Day of Discharge</th>
<th>Therapy Day of Discharge</th>
<th>Family here by</th>
<th>Actual Discharge Time</th>
<th>Root Cause</th>
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<tbody>
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<td>1</td>
<td>5/29/09 Mon</td>
<td>6/1/09</td>
<td>3</td>
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<td>8:15</td>
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<td>YES</td>
<td>11:25</td>
<td>Shf would not accept the pt until they had insurance approval</td>
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<tr>
<td>2</td>
<td>6/3/09 Wed</td>
<td>6/3/09</td>
<td>0</td>
<td>H</td>
<td>6/2/09 12:45</td>
<td>20.0</td>
<td>9:50</td>
<td>9:55</td>
<td>10:05</td>
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<td>NO</td>
<td>NO</td>
<td>10:45</td>
<td>1 Prescription sent at 5:10pm day before. Family arrived at 10:00</td>
</tr>
<tr>
<td>3</td>
<td>6/3/09 Wed</td>
<td>6/3/09</td>
<td>0</td>
<td>H</td>
<td>6/2/09 15:45</td>
<td>17.0</td>
<td>10:05</td>
<td>10:10</td>
<td>10:30</td>
<td>NO</td>
<td>NO</td>
<td>NO</td>
<td>11:13</td>
<td>Wife arrived at 10:05 and needed teaching w/Juzos. Diane Kobe is speaking w/family at 10:40. Pt. has suture questions for MD at 10:50. MD clarified suture question at 11:00.</td>
</tr>
</tbody>
</table>
Admission and Discharge Progress

Adult PMR Admits and Discharges per Hour

10 am: DC Target (70%)
1 pm: Admission Target (70%)

Mean DC May, 2009: 11:28 am
Pre-Project: 2:36 pm

Mean Admission May, 2009: 1:22 pm
Pre-Project: 4:47 pm
Admissions and Discharge—A Team Effort

Admissions

Day before Admission
2:30 pm: ID likely admits

Day of Admission
• 9:00 am: Medical clearance
• 10:00 am: Insurance clearance
• 1:00 pm: Patient arrives on 6A
• Therapy on day of admit

Discharge

Day before DC
• 9:00 am: Scripts to pharmacy

Day of DC
• 9 am: Family arrives
• 9:10 am: DC summary to clerk
• 9:30 am: Clerk gives paperwork to RN
• 9:45 am: Nurse completes DC process
• 10:00 am: Patient/Family leave
Key Learnings from Both Projects

1. The Lean approach, and its emphasis on standardized work, can apply to a complex inpatient process.

2. Buy in from all stakeholders is critical—everyone involved must be willing to build a future state.

3. Setting expectations is paramount to success.

4. Set goals, and then adjust based on what you learn.

5. Understand the work of others—Do a Gemba.

6. Set a proper scope for the project.

7. When developing your milestones, work backwards from the admission or discharge. On transitional days it is important to focus on what needs to be done by hour (not day) to achieve your goal.

8. A visible monitoring system is critical for sustaining the process and maintaining momentum.