Improving The Hospitalized Patients’ Experience Through Physician Workflow

Washington State Government Lean Transformation Conference

Daniel Hanson MD

October 15, 2013
Today’s Goals

• Share Our Experiences, Challenges and Solutions
• It’s about People (Not Healthcare)
• Demonstrate Use of Lean Tools (VSM, One Piece Flow, PQ Analysis, Standard Work, Level Loading, Visual Control).
• Leave Inspired to Try Things!
• What About You?
How Do We Know We Are Doing A Good Job?

- RN Communication
- MD Communication
- Responsiveness
- Pain Control
- Medication Lists
- Environment of Care
- Clean and Noise
- Discharge Instructions
- Overall Impressions
GOT FLOW?
Value Stream Mapping
One Piece Flow

Six Common Disjointed Processes Producing in Batches of 10

Example B One Piece Flow

Six Common Joined Processes Producing in One Piece Flow

In both examples each process takes 1 minute to complete 1 part.
Value Stream Map of Hospitalist Rounds (batching method)

START
Hospitalist reviews all labs and vital signs on computer

32 min

Walking time

Information transferred from computer to paper notes

3 min

Interrupted to leave the room to get information from RN or other staff

21 min

Multiple pages and cell phone calls from staff who have been waiting to see hospitalist

21 min

Orders delayed, missed, or duplicated due to batching to the end of rounds

250 min (10 patients)

Progress notes delayed to the afternoon

19 min

Searching computer for information previously reviewed

60 min

FINISH
Completes all progress notes and discharge summaries

20 min

See and examine patient #1

25 min

20 min

See and examine patient #2

250 min

200 min

15 min

25 min

Watches all orders after seeing all 12 patients

19 min

3 min

Leads Time (Time from start of process to finish) = 415 min (36 min/patient/day)

<table>
<thead>
<tr>
<th>Value added work</th>
<th>15 min</th>
<th>20 min</th>
<th>20 min</th>
<th>200 min</th>
<th>15 min</th>
<th>25 min</th>
</tr>
</thead>
<tbody>
<tr>
<td>Non-value added work</td>
<td>20 min</td>
<td>4 min</td>
<td>4 min</td>
<td>50 min</td>
<td>7 min</td>
<td>35 min</td>
</tr>
</tbody>
</table>

TOTALS

295 min (71%)

120 min (29%)
Value Stream Map of Hospital Rounds (Using One Piece Flow)

START
Review labs and vitals for patient #1, then see patient #1

Complete orders and progress note for patient #1

10 patients, 225 min Plus 33 min walking

Review labs and vitals for patient #12, then see patient #12

FINISH
Complete orders and progress note on patient #12

17 min 5.5 min 0 min 17 min 5.5 min

Rapid Process Improvement Workshop Progress Report

Team Name: Hospitalists

Process Summary: Reduce the non-value added time in the Hospitalists daily rounds through creation of one piece flow, standard work and elimination of interruptions.

<table>
<thead>
<tr>
<th>Metrics</th>
<th>Baseline</th>
<th>Target &gt; 50%</th>
<th>Day 2</th>
<th>Day 3</th>
<th>Day 5</th>
<th>Final</th>
<th>Percent Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lead Time – Time it takes to complete rounds on 12 patients</td>
<td>415 min</td>
<td>350 min</td>
<td>270 min</td>
<td>320 min</td>
<td>290 min</td>
<td>270 min</td>
<td>35%</td>
</tr>
<tr>
<td>Quality – Percent of patients w/ completed rounds by 12PM</td>
<td>66%</td>
<td>100%</td>
<td>80%</td>
<td>90%</td>
<td>100%</td>
<td>100%</td>
<td>34%</td>
</tr>
<tr>
<td>Quality – Number of defects (interruptions, unnecessary pages, delayed progress notes and orders.)</td>
<td>14</td>
<td>7</td>
<td>8</td>
<td>9</td>
<td>5</td>
<td>5</td>
<td>64%</td>
</tr>
<tr>
<td>Walking distance – Hospital daily walking distance</td>
<td>2.09 miles</td>
<td>1 mile</td>
<td>1.9 miles</td>
<td>1.9 miles</td>
<td>1.9 miles</td>
<td>1.9 miles</td>
<td>9%</td>
</tr>
</tbody>
</table>

© 2013 Virginia Mason Medical Center
Notable innovations

FLOW ROUNDING

Each Intern seeing one patient at a time.

Complete the work for each patient before moving to the next patient.

The attending and resident “toggling” from one intern to the other.
I had walked into the exam room to listen to this patient; but my mind was a few steps behind, as I struggled with thoughts about the colleague who’d just snapped at me over the phone because she was in no mood to get another new consult, my mounting piles of unfinished paperwork, and the young patient with widespread cancer whom I’d seen earlier in the day. Thoughts about my new patient jumbled in the mix, too, but they came into focus only after I had pushed away the fears that I might have neglected to order a key test on my last patient, that I’d forgotten to call another patient and that I was already running behind schedule.
# Standard Rounding Checklist

<table>
<thead>
<tr>
<th>Team</th>
<th>Observation Date: ________________</th>
<th>Intern: (circle one) A B Med Stud Rm# __ Patient #1</th>
<th>Intern: (circle one) A B Med Stud Rm# __ Patient #2</th>
<th>Intern: (circle one) A B Med Stud Rm# __ Patient #3</th>
<th>Intern: (circle one) A B Med Stud Rm# __ Patient #4</th>
</tr>
</thead>
<tbody>
<tr>
<td>MS3 or INTERN Intern A:</td>
<td>Observations By: ________________</td>
<td>Obs: ☐ DNO: ☐</td>
<td>Obs: ☐ DNO: ☐</td>
<td>Obs: ☐ DNO: ☐</td>
<td>Obs: ☐ DNO: ☐</td>
</tr>
<tr>
<td>(name)</td>
<td>Intern B:</td>
<td>Obs: ☐ DNO: ☐</td>
<td>Obs: ☐ DNO: ☐</td>
<td>Obs: ☐ DNO: ☐</td>
<td>Obs: ☐ DNO: ☐</td>
</tr>
<tr>
<td>(name)</td>
<td></td>
<td>Obs: ☐ DNO: ☐</td>
<td>Obs: ☐ DNO: ☐</td>
<td>Obs: ☐ DNO: ☐</td>
<td>Obs: ☐ DNO: ☐</td>
</tr>
<tr>
<td>Resident: (name)</td>
<td></td>
<td>Obs: ☐ DNO: ☐</td>
<td>Obs: ☐ DNO: ☐</td>
<td>Obs: ☐ DNO: ☐</td>
<td>Obs: ☐ DNO: ☐</td>
</tr>
<tr>
<td></td>
<td>• HOLDS BEDSIDE ROUNDS (AS APPROPRIATE)</td>
<td>Obs: ☐ DNO: ☐</td>
<td>Obs: ☐ DNO: ☐</td>
<td>Obs: ☐ DNO: ☐</td>
<td>Obs: ☐ DNO: ☐</td>
</tr>
<tr>
<td></td>
<td>• Introduces team, updates names on white board</td>
<td>Obs: ☐ DNO: ☐</td>
<td>Obs: ☐ DNO: ☐</td>
<td>Obs: ☐ DNO: ☐</td>
<td>Obs: ☐ DNO: ☐</td>
</tr>
<tr>
<td></td>
<td>• ASKS FOR RN INPUT WHEN AVAILABLE</td>
<td>Obs: ☐ DNO: ☐</td>
<td>Obs: ☐ DNO: ☐</td>
<td>Obs: ☐ DNO: ☐</td>
<td>Obs: ☐ DNO: ☐</td>
</tr>
<tr>
<td></td>
<td>• Presents patient in SOAP format</td>
<td>Obs: ☐ DNO: ☐</td>
<td>Obs: ☐ DNO: ☐</td>
<td>Obs: ☐ DNO: ☐</td>
<td>Obs: ☐ DNO: ☐</td>
</tr>
<tr>
<td></td>
<td>• Solicits resident/attending feedback</td>
<td>Obs: ☐ DNO: ☐</td>
<td>Obs: ☐ DNO: ☐</td>
<td>Obs: ☐ DNO: ☐</td>
<td>Obs: ☐ DNO: ☐</td>
</tr>
<tr>
<td></td>
<td>• EXPLAINS PLAN OF CARE SUMMARY TO PATIENT</td>
<td>Obs: ☐ DNO: ☐</td>
<td>Obs: ☐ DNO: ☐</td>
<td>Obs: ☐ DNO: ☐</td>
<td>Obs: ☐ DNO: ☐</td>
</tr>
<tr>
<td></td>
<td>• Finishes documentation (after bedside rounds)</td>
<td>Obs: ☐ DNO: ☐</td>
<td>Obs: ☐ DNO: ☐</td>
<td>Obs: ☐ DNO: ☐</td>
<td>Obs: ☐ DNO: ☐</td>
</tr>
<tr>
<td></td>
<td>• Pages RN to join rounds</td>
<td>Obs: ☐ DNO: ☐</td>
<td>Obs: ☐ DNO: ☐</td>
<td>Obs: ☐ DNO: ☐</td>
<td>Obs: ☐ DNO: ☐</td>
</tr>
<tr>
<td></td>
<td>• ACTIVELY Listens to presentation (no interrupting)</td>
<td>Obs: ☐ DNO: ☐</td>
<td>Obs: ☐ DNO: ☐</td>
<td>Obs: ☐ DNO: ☐</td>
<td>Obs: ☐ DNO: ☐</td>
</tr>
<tr>
<td></td>
<td>• Provides presenter with guidance/feedback</td>
<td>Obs: ☐ DNO: ☐</td>
<td>Obs: ☐ DNO: ☐</td>
<td>Obs: ☐ DNO: ☐</td>
<td>Obs: ☐ DNO: ☐</td>
</tr>
<tr>
<td></td>
<td>• Examines patient</td>
<td>Obs: ☐ DNO: ☐</td>
<td>Obs: ☐ DNO: ☐</td>
<td>Obs: ☐ DNO: ☐</td>
<td>Obs: ☐ DNO: ☐</td>
</tr>
<tr>
<td></td>
<td>• Use “one minute preceptor” when applicable</td>
<td>Obs: ☐ DNO: ☐</td>
<td>Obs: ☐ DNO: ☐</td>
<td>Obs: ☐ DNO: ☐</td>
<td>Obs: ☐ DNO: ☐</td>
</tr>
<tr>
<td></td>
<td>• Additional teaching pearl on related topic when able</td>
<td>Obs: ☐ DNO: ☐</td>
<td>Obs: ☐ DNO: ☐</td>
<td>Obs: ☐ DNO: ☐</td>
<td>Obs: ☐ DNO: ☐</td>
</tr>
<tr>
<td></td>
<td>• Places orders in Cerner (after bedside portion complete)</td>
<td>Obs: ☐ DNO: ☐</td>
<td>Obs: ☐ DNO: ☐</td>
<td>Obs: ☐ DNO: ☐</td>
<td>Obs: ☐ DNO: ☐</td>
</tr>
<tr>
<td></td>
<td>• Reviews MAR (after bedside portion complete)</td>
<td>Obs: ☐ DNO: ☐</td>
<td>Obs: ☐ DNO: ☐</td>
<td>Obs: ☐ DNO: ☐</td>
<td>Obs: ☐ DNO: ☐</td>
</tr>
<tr>
<td>Attending: (name)</td>
<td></td>
<td>Obs: ☐ DNO: ☐</td>
<td>Obs: ☐ DNO: ☐</td>
<td>Obs: ☐ DNO: ☐</td>
<td>Obs: ☐ DNO: ☐</td>
</tr>
<tr>
<td></td>
<td>• ACTIVELY Listens to student/intern and resident, without interrupting</td>
<td>Obs: ☐ DNO: ☐</td>
<td>Obs: ☐ DNO: ☐</td>
<td>Obs: ☐ DNO: ☐</td>
<td>Obs: ☐ DNO: ☐</td>
</tr>
<tr>
<td></td>
<td>• Provides guidance/feedback on plan</td>
<td>Obs: ☐ DNO: ☐</td>
<td>Obs: ☐ DNO: ☐</td>
<td>Obs: ☐ DNO: ☐</td>
<td>Obs: ☐ DNO: ☐</td>
</tr>
<tr>
<td></td>
<td>• Use “one minute preceptor” when applicable</td>
<td>Obs: ☐ DNO: ☐</td>
<td>Obs: ☐ DNO: ☐</td>
<td>Obs: ☐ DNO: ☐</td>
<td>Obs: ☐ DNO: ☐</td>
</tr>
<tr>
<td></td>
<td>• Additional teaching pearl on related topic when able</td>
<td>Obs: ☐ DNO: ☐</td>
<td>Obs: ☐ DNO: ☐</td>
<td>Obs: ☐ DNO: ☐</td>
<td>Obs: ☐ DNO: ☐</td>
</tr>
<tr>
<td></td>
<td>• Finishes documentation and billing (after bedside portion complete)</td>
<td>Obs: ☐ DNO: ☐</td>
<td>Obs: ☐ DNO: ☐</td>
<td>Obs: ☐ DNO: ☐</td>
<td>Obs: ☐ DNO: ☐</td>
</tr>
</tbody>
</table>

**OBS = Action Observed**  
**DNO = Did Not Observe; Unknown**
Standard Work

- Putting down in writing, an agreement, that tells everyone where we are at a point in time.
- We cannot improve, or know we have improved, without a standard.
- Makes it visible to know abnormal from normal or expected from unexpected.
Standard Work
Hospitalist Float Team Rounding: Variation from Scheduled Rounding Arrivals

- 2 hr window ("cable guy" hours)
- Flow manager planned schedule
- % Missed "cable guy" window

© 2013 Virginia Mason Medical Center
Product-Quantity (PQ) Analysis is a method that allows you to categorize your demand into specific families of products or services.
PQ Analysis allows you to:

- clarify your demand
- see where processes intersect
- reveal opportunities for efficiency gains
- understand how your resources are over and under utilized
- more effectively target your improvement efforts
- have more effective implementation of better solutions
# Level Loading & Visual Control

<table>
<thead>
<tr>
<th>Team A</th>
<th>Team B</th>
<th>Team C</th>
<th>Team D</th>
<th>Swing A</th>
<th>Swing B</th>
<th>Night</th>
</tr>
</thead>
<tbody>
<tr>
<td>OFF</td>
<td>OFF</td>
<td>OFF</td>
<td>ON</td>
<td>OFF</td>
<td>OFF</td>
<td>OFF</td>
</tr>
<tr>
<td>NO</td>
<td>NO</td>
<td>NO</td>
<td>NO</td>
<td>NO</td>
<td>NO</td>
<td>NO</td>
</tr>
<tr>
<td>Adler MD-H</td>
<td>Franco MD,</td>
<td>Poole DO,</td>
<td>Deiter DO,</td>
<td>Lee MD, Ti</td>
<td>Fang MD, A</td>
<td>Hanson MD,</td>
</tr>
</tbody>
</table>

## Patient List Graph

Admit Phone List Patients In Hospital

![Graph showing patient list counts for different teams and shifts]
GOT FLOW?
How Did We Do?

• Share Our Experiences, Challenges and Solutions
• It’s about People (Not Healthcare)
• Demonstrate Use of Lean Tools (VSM, One Piece Flow, PQ Analysis, Standard Work, Level Loading).
• Leave Inspired to Try Things!
• What About You?
Who Are Your Customers?