The Evolution of Lean in Healthcare:
From tools and events to coaching and daily improvement

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Rouge Valley Health System
RVHS formed in 1998 as part of a provincial amalgamation of hospitals:

- Scarborough Centenary Hospital, originally opened in 1967, now is RVC;
- Ajax & Pickering General Hospital, originally opened in 1954, now is RVAP.
Getting to Know Rouge Valley

• 2 hospital campuses serving the communities of west Durham and east Toronto

• $300 million annual budget

• Part of Central East Local Health Integration Network (CELHIN), our funder

• 2,774 staff, 513 physicians

<table>
<thead>
<tr>
<th></th>
<th>Rouge Valley Ajax and Pickering</th>
<th>Rouge Valley Centenary</th>
<th>Rouge Valley Health System</th>
</tr>
</thead>
<tbody>
<tr>
<td>Beds staffed and in operation</td>
<td>168</td>
<td>322</td>
<td>490</td>
</tr>
<tr>
<td>Hospital visits and services</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Emergency visits</td>
<td>56,706</td>
<td>60,104</td>
<td>116,810</td>
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<tr>
<td>Inpatient discharges</td>
<td>8,594</td>
<td>16,388</td>
<td>24,982</td>
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<tr>
<td>Surgical inpatients</td>
<td>1,632</td>
<td>3,353</td>
<td>4,985</td>
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<tr>
<td>Surgical outpatients</td>
<td>5,168</td>
<td>11,245</td>
<td>16,413</td>
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<tr>
<td>Outpatient clinic visits</td>
<td>62,383</td>
<td>136,578</td>
<td>198,961</td>
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<tr>
<td>Births</td>
<td>1,557</td>
<td>2,107</td>
<td>3,664</td>
</tr>
<tr>
<td>Cardiac catheterizations</td>
<td>Not applicable</td>
<td>3,444</td>
<td>3,444</td>
</tr>
<tr>
<td>Pacemaker implants</td>
<td>Not applicable</td>
<td>259</td>
<td>259</td>
</tr>
<tr>
<td>ICD implants</td>
<td>Not applicable</td>
<td>146</td>
<td>146</td>
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<tr>
<td>Angioplasty procedures</td>
<td>Not applicable</td>
<td>1,343</td>
<td>1,343</td>
</tr>
<tr>
<td>Hip replacements</td>
<td>91</td>
<td>152</td>
<td>243</td>
</tr>
<tr>
<td>Knee replacements</td>
<td>142</td>
<td>271</td>
<td>413</td>
</tr>
<tr>
<td>Cataracts</td>
<td>Not applicable</td>
<td>1,153</td>
<td>1,153</td>
</tr>
<tr>
<td>MRI scans</td>
<td>1,771</td>
<td>10,668</td>
<td>12,439</td>
</tr>
<tr>
<td>Cancer surgeries</td>
<td>318</td>
<td>850</td>
<td>1,168</td>
</tr>
</tbody>
</table>
### Our Burning Platform for Transformation

#### 10 Year Surplus/Deficit Trend

<table>
<thead>
<tr>
<th>Years</th>
<th>Dollars (Thousands)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2004/05</td>
<td>(3,014)</td>
</tr>
<tr>
<td>2005/06</td>
<td>(5,748)</td>
</tr>
<tr>
<td>2006/07</td>
<td>(2,527)</td>
</tr>
<tr>
<td>2007/08</td>
<td>(6,470)</td>
</tr>
<tr>
<td>2008/09</td>
<td>2,419</td>
</tr>
<tr>
<td>2009/10</td>
<td>4,406</td>
</tr>
<tr>
<td>2010/11</td>
<td>8,938</td>
</tr>
<tr>
<td>2011/12 B</td>
<td>4,500</td>
</tr>
<tr>
<td>2012/13 P</td>
<td>4,677</td>
</tr>
<tr>
<td>2013/14 P</td>
<td>4,750</td>
</tr>
</tbody>
</table>

#### Surplus / (Deficit)
- (3,014)
- (5,748)
- (2,527)
- (6,470)
- 2,419
- 4,406
- 8,938
- 4,500
- 4,677
- 4,750

#### Nothing Done
- (6,748)
- (10,280)
- (14,457)
- (19,351)
- (23,875)
- (28,090)
- (32,531)
The Early Days of Our Journey

- **2007**: Board Appoints New CEO
- **2008**: Peer Review
- **2009**: Strategic Plan 2008-11 Approved
- **2010**: Strategic Plan 2011-14 Approved
- **2011**: Financial Sustainability Plan Launched

*Lean as our Management Philosophy*
The STAR Framework
Corporately Defined Expectations for Lean Deployment and Sustainment

**STANDARD**
All of the following are in place:
- Process Control Boards
- Performance Trending Boards
- 6S
- A3
- Rounding
- Kaizen Participation
- Leader Training

**ADVANCED**
All of the following are in place:
- Sustainment of Standard level
- Kamishibai
- Safety Calendar (can be part of Kamishibai system)
- Idea Board with problem-solving huddles
- Department leads and sustains its own kaizen events (at least 2 per yr)

**ROLE MODEL**
All of the following are in place:
- Sustainment of Standard and Advanced levels
- Internal knowledge sharing (joint kaizen with another dept; facilitator for another dept’s Lean event; lead an in-service; internal article or poster presentation)
- External knowledge sharing (e.g. joint kaizen event with external partners; conference presentation; published article)
- Use of one or more higher-level Lean tools (e.g. Kanban, Andon, SMED, etc.)
What have we seen so far?

failure is not the opposite of success

failure is the building blocks of learning. It is a mistake to suppose that we succeed through success; we more often succeed through failures. The trick... fail fast!

How do we move to...

Principle-Based Architecture

the structure is the story

the architecture of what drives results. If we can understand and see the structure we can engage and adjust the organization to help us get where we want to go...faster

RVHS Executive Team identified 2 key areas for corporate development:

**Continuous Improvement and Capability Building**

Graphic From: J. Liker, *The Toyota Way to Continuous Improvement*
Objective of the Lean Management System

Our Goal:

To develop our people to solve problems and improve performance.
Developing a Lean Management System

Visual Management

Department Performance Board
Staff Improvement Board
Kamishibai

Daily Stat Sheet

Supervisor / Manager
Daily Coaching
Manager / Director
Coaching
Director / VP
Coaching

Department Scorecard

Driver Metrics
Watch Metrics

Monthly Performance Reviews

Manager (Week 1)
Director (Week 2)
VP (Week 3)
Developing a Status Sheet

Daily Status Sheet

Adapted From: ThedaCare Centre for Healthcare Value
# The Daily Status Sheet and Lean Practices

## Objectives of Status Sheet
- To proactively plan the day
- To learn and understand the business
- Gain insights for future problem solving
- To better understand coaching needs for staff around problem solving
- To develop our leaders

## Linkage to Lean Practices
- Use of Standard work
- Respect for People (Develop our Staff to Solve Problems)
- Create visibility between normal and abnormal
- Developing ‘Andon’ Systems
- Use of PDSA thinking to solve problems
# Structure of the Daily Status Sheet

**Manager to Director Daily Status Sheet**

<table>
<thead>
<tr>
<th>VP Daily/Weekly Stat Sheet Kim E.</th>
<th>Manager 3S Inpatient Oncology</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Dates</strong></td>
<td><strong>Daily Measures</strong></td>
</tr>
<tr>
<td>Monday</td>
<td>Safety</td>
</tr>
<tr>
<td>Tuesday</td>
<td>How many patients or staff are at risk?</td>
</tr>
<tr>
<td></td>
<td>infections</td>
</tr>
<tr>
<td></td>
<td>interpreter concerns</td>
</tr>
<tr>
<td></td>
<td>employee injuries</td>
</tr>
<tr>
<td><strong>Daily Measures</strong></td>
<td>Quality</td>
</tr>
<tr>
<td></td>
<td>Any quality opportunities or concerns?</td>
</tr>
<tr>
<td></td>
<td>falls, bundles, med Rec/errs</td>
</tr>
<tr>
<td></td>
<td>Any patient complaints/Follow ups?</td>
</tr>
<tr>
<td></td>
<td>Any equipment or room concerns?</td>
</tr>
<tr>
<td><strong>People</strong></td>
<td>People</td>
</tr>
<tr>
<td></td>
<td>Any staff with special concerns or barriers?</td>
</tr>
<tr>
<td></td>
<td>Who needs the most support, how can we help them?</td>
</tr>
<tr>
<td></td>
<td>Any physician or leadership concerns?</td>
</tr>
<tr>
<td></td>
<td>Any thing, staff or provider to recognize or celebrate today?</td>
</tr>
<tr>
<td></td>
<td>How are you planning on covering lunches and breaks?</td>
</tr>
<tr>
<td></td>
<td>Any care management concerns?</td>
</tr>
</tbody>
</table>

**Frequency**

- **Manager-Charge:** Daily
- **Director-Manager:** Weekly
- **VP-Director:** Monthly

Adapted From: ThedaCare Centre for Healthcare Value
Status Sheet: Clarifying Roles

Key Messages:

• The pattern repeats at every level to ensure everyone has the opportunity to get feedback and improve.

• In the typical Manager Status Sheet, the First Coach would be the Director with the TMO providing additional support during LMS training.

• In the Manager Status Sheet, the Second Coach would be the VP or TMO during LMS training. The Second Coach is focused on providing feedback for the First Coach.

Adapted From: The Toyota Kata, Mike Rother
Creating an Area Improvement Centre

Visual Management
Create a single ‘lane’ of focus for each dimension of corporate performance

Post current strategic plan as reference

Post framework of key initiatives and Patient Declaration of Values

The layout of the board tells the ‘improvement story’ of the department and each initiative. The information should flow like an A3

Describe goal in a single statement

Chart key performance metric over time to demonstrate current performance level

Post A3 which describes the key initiatives that are focused on driving improved performance

Post other related ‘process metrics’ or initiative implementation information (pictures ect.)
The ‘Bottom Up Story’ of the Performance Board

Linkage to RVHS Strategy
- Want to visually demonstrate how departmental outcomes link with RVHS objectives

Department Outcome Measure
- Tracking performance over time to see variability and support sustainment
- The LMS department scorecard standardizes the display of the outcome measure

Process Measures
- Process control supports daily management of key drivers
- Primary tools include process control boards, daily run chart, safety cross, Pareto chart and Kamishibai cards

Ideas for Change
- Countermeasures are developed based on root cause analysis and best practices
- The A3 and ‘WWW’ are the primary tools to support the team
# Layout of the Idea Board

<table>
<thead>
<tr>
<th>New Improvement Ideas</th>
<th>In Progress Work &amp; Ideas</th>
<th>Implemented Ideas</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Impact</strong></td>
<td><strong>Possible</strong></td>
<td><strong>Celebrations</strong></td>
</tr>
<tr>
<td><strong>Difficulty</strong></td>
<td><strong>Kibosh</strong></td>
<td>Stephanie passed her AQ Exam!</td>
</tr>
<tr>
<td><strong>Implement</strong></td>
<td><strong>Challenge</strong></td>
<td>Zero department pressure ulcers!</td>
</tr>
</tbody>
</table>

Adapted From: ThedaCare Centre for Healthcare Value
### New Improvement Ideas

- Briefly review each lane in your Area Improvement Centre
- Briefly review PDSAs associated with lanes. If the status indicator is green, acknowledge the work and move on. If the status indicator is red, ask the following questions: 1) Any new defects? 2) Adequate resources? 3) Barriers to moving forward?
- Discussion points may vary day by day
- End on a high note – identify reasons to celebrate and make them visual

### Almost Implemented Ideas

- Use the PICK chart to get feedback from staff about whether working on this will be high or low impact and whether it is easy or hard to do
- If an opportunity falls into Kibosh, circle back with the originator but do not place on the PICK chart
- All patient or employee safety or quality issues are immediately moved to be worked on
- If opportunity is related to existing PDSA, driver, or other work in progress, move the Improvement Opportunity form to that PDSA to be incorporated
- As capacity becomes available, problems can be moved from PICK chart to work in progress
- Assign resources to new work in progress with owner(s), & mentor / coach

### Implemented Ideas

- Review and record any new improvement opportunities: opportunities identified that barriers they are facing in their day

### Celebrations

- Monthly (+/- daily) tracking on a run chart or simple bar chart
- Improvement Tickets and PDSAs get moved over to this area once completed

### In Progress Work & Ideas

- Start with work in progress:
  a) Just Do Its – any barriers to moving forward?
  b) PDSAs – if the status indicator is green, acknowledge the work and move on; if the status indicator is red, ask about barriers.

- As capacity becomes available, problems can be moved from PICK chart to work in progress

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Adapted From: ThedaCare Centre for Healthcare Value
Two Options:

1) Portfolio Leadership Team
   The VP and Directors meet to discuss progress on department drivers as it relates to strategic deployment and ‘Top 10’

2) VP / Director Huddle
   The VP and Director meet at each performance board to discuss progress on department drivers as it relates to strategic deployment and ‘Top 10’

Director / Manager Huddle
Director meets with manager (+ other members of the ELT, if desired) at their performance board. Countermeasure summaries are presented, and additional resources are allocated if needed.

Leadership Team
The manager meets with leadership team following defined Standard Work around scorecard. When areas are not meeting goal-countermeasures are developed and summarized.

Adapted From: ThedaCare Centre for Healthcare Value
Wave 1 Staff Feedback (All Model Cells)

1. I understand what the department goals are for the next year
2. There are regular meetings on units/departments that focus on the review of unit/department performance metrics and result in plans to improve processes
3. Department performance metrics are openly displayed and reviewed with front line staff on a regular basis
4. Senior Leaders are aware of front line issues and challenges (the way things really are around here)
5. Learning is an important part of our daily work
6. Employee and physician suggestions on how to improve department and/or hospital performance are actively solicited
7. Employees and physicians understand how their area’s performance metrics impact the whole organization’s performance
8. The organization facilitates regular knowledge/idea sharing forums across units/departments that are related to hospital improvement
9. Visual displays of hospital performance data are regularly reviewed and used to drive improvement
10. When changes are made in my unit/department, employees and physicians are involved in the process

POST LMS Score

PRE LMS Score

Negative Response

Neutral

Positive Response

Share • Learn • Grow

AME Association for Manufacturing Excellence
Experience of A Model Cell
Support Services: Hospitality

What is “Hospitality”?  
• Patient Transport  
• Daily Cleaning  
• Discharge Cleaning  
• Patient Meal Delivery  
• Nursing Assistance  
• Approx. 300 Multi Skilled Employees
What Can Be Learned From This Model Cell?

How does the Leadership Management “System” help us with “the problems we are trying to solve”?
First Things First... The Lean Context

After 6 years what does “Lean” mean to us?

- What is required for best patient care?
- What needs to be done to achieve that?
- What is our plan?
- Continuously improve Safety, Quality, Efficiency?
Our Approach

The plan is our foundation on which to build; our approach is…

• Have a Plan
• Visualize the Plan
• Respond to the Plan
• Improve the Plan (safety/quality/efficiency)
Our First Problem!
...and solutions so far

How do you build a Plan when everyone cleans differently?

- Develop Standard Work
- Select/Train Master Trainers
- Train 300 Staff
- Sustain
Our Next Problem!

...solutions to follow

How do you build a Standard Plan when the day is so unpredictable?

- The day depends on who comes in the door
Our Next Problem!

... solutions so far

Maintaining flow

• 75% of the day is predictable
• 2 different tactics
• Staff and plan to 75%
• Additional staff move to multi-skilled pool
• 75% exceeded – send in reinforcements
• Problems now separated
Yet Another Problem!

...and solutions so far

Everyone is so spread out, how can we see if the plan is working?

- Call Centre tracking (actual vs. plan)
- Maps and door magnets
- Control boards
- Colour coded carts/equipment
Another Problem Still!

...and solutions so far

A Supervisor has 55 direct reports, how can they monitor all this?

- Leader Standard work
- Group Leaders
- Red/Yellow Pager
Introducing LMS
...congratulations you have been selected

Initial thoughts on being selected as a pilot site?

- **Distraction** from implementing the plan
- Need **Standard Work** not indicators (yet)
- Focus needs to be plan; **process = outcome**
- Staff ideas will not be **focused**
- Out of sequence; **process then management**
- Either way – ok, sure, we’ll do it – so we start.
Big New Problem

... in the mean time a new problem begins to emerge

“how do we maintain the base and continue to move ahead?”
Defining the Big New Problem!

... ok so it took 6 why’s!

• Why is the plan not always followed?
• Lack of front line passion for it – why?
• Leadership has not fostered passion – why?
• We may not really know how – why?
• We are still managing the old way – why?
• We are comfortable with it – why?
• We haven’t practiced anything else
Can LMS Help?

... maybe this “distraction” can help with our problem
LMS as a Solution

... a new way of thinking

- Process is performed by people
- People are the process
- Develop people to develop the process
- Not one before the other
How LMS Helps
... changing the way we manage

• Build Leadership discipline
• Develop Leaders as coaches
• Practice implementing ideas
• Build ownership/passion of process
• Build PDCA know how

“Habit is the most effective form of motivation”
LMS Purpose?

... how does LMS help solve our problem

Builds “people capacity” for:
LMS Next Steps?

... what’s next for Support Services... now that we kind of get it

- Pilot expanded
- LMS in other “plan” cell
- “Plan” and LMS together forever
- Grow future Leadership from within
Thank You!

Session Code: ThP/11

The Evolution of Lean in Healthcare

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