THE POTENTIAL OF LEAN THINKING IN HEALTHCARE

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LEA has helped many organisations get big benefits from following Toyota in using Lean thinking.

- Consumer goods, construction and the public sector
- I brought the global lean healthcare pioneers together to encourage others to follow them.
- We conducted our own action learning experiments to learn how lean works in healthcare.
- We published our results so far in Making Hospitals Work so others can do it themselves.
- Now we are learning how to build the right management systems to sustain lean.
The Healthcare Challenge

- The healthcare industry was shocked to discover how far behind they had fallen on **quality** and **safety**
- Used **evidence based medicine** to define **best practice interventions** to eliminate variation and errors
- *But these improvements are difficult to sustain in isolation*

- Meanwhile containing healthcare **costs** is a growing issue
- Lean uses **evidence based management** to improve the **flow of work** to eliminate delays for patients, wasted effort for staff and unnecessary costs for hospitals
- *If we can go beyond point improvements and lean pilots*
Coming Together

• Quality and Lean are two sides of a coin – together they:
  – Use the **scientific method** for prioritizing, planning and problem solving
  – Use **lean principles** and **tools** to turn activities into value streams (integrated patient journeys)
  – **Manage visually** to establish stability, see variances and reveal problems
  – Develop **problem solving** skills through learning by doing

• **But the end-to-end perspective challenges traditional ways of managing**
What are the patient journeys through the District General Hospital?
Using the A3 Method

<table>
<thead>
<tr>
<th>Title:</th>
<th>Proposed countermeasures:</th>
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<tbody>
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<td>What is the problem?</td>
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<td>Current condition:</td>
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Evidence based management
Defining the Problem

What is the underlying problem?
Understanding Demand

Which patients to follow?

How many and where do they go?

What is the rate of demand?
6.5 days waiting for 3 hours of work!
Four Questions 1

1. What is the rate of demand?

What is the planned work?
Do we have the staff?

2. How to create flow within departments?

Synchronise actions on the Wards

Cells in ED
Four Questions 2

3. How to create flow between departments?

Use buffers to signal the need for a bed

4. Where to schedule this flow?

<table>
<thead>
<tr>
<th>Speciality</th>
<th>Every Day</th>
<th>Every Hr</th>
<th>Every 2 Hrs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Endo</td>
<td>18</td>
<td>1.5</td>
<td>3</td>
</tr>
<tr>
<td>Gastro</td>
<td>24</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>Cardio</td>
<td>6</td>
<td>0.5</td>
<td>1</td>
</tr>
<tr>
<td>Resp</td>
<td>18</td>
<td>1.5</td>
<td>3</td>
</tr>
<tr>
<td>Elderly</td>
<td>6</td>
<td>0.5</td>
<td>1</td>
</tr>
<tr>
<td>Total</td>
<td>72</td>
<td>6</td>
<td>12</td>
</tr>
</tbody>
</table>

Can we level discharge?
Developing the Action Plan

Title: Justification for Middleton's Emergency Medical

What is the problem?
Medical LoS is our BIG problem and is having an adverse effect on our other Big 4

Current condition:
1571 minutes (15%) Treatment Time
V's
9415 minutes (85%) Waiting Time

Target condition: Reduce Waiting Time by 64%, therefore reduce average LoS for Medical Patients by 4.94 days

Root Cause Analysis:
• No real plan for patients (hence no actual)
• Departmental working hours are not synchronised
• Capacity (staff) not calculated to meet Demand
• Frequency of interventions not designed to meet Demand

Responsible: JB Team members: BW/NE/JE/ML/HW

Process Re-Design

Proposed countermeasures:
• Create Stability thro' Ops Management
• Place 'offline' services 'online' & get them operating to takt
• Create Continuous Flow
• Introduce Buffers where we cannot Flow
• Create a Single Point of Schedule (Pacemaker)

Plan:

Follow Up:
• Conflicting Cost Improvement Initiatives in departments & divisions
• Who will do this work
• How will we know if the actions have the impact needed?

Agreed by: MT Date: 08/11/07
Line Management

- Create **Plan for Every Patient** boards everywhere to **see** progress, variances and problems quickly
- Enable staff and line management to **respond** quickly to variances
- Show line management how to **teach** staff to analyse the root causes of persistent problems

By the Hour in ED

By the Day on Wards
Value Stream Management

- Create a **coordination** mechanism
  - a visual hub plus status boards
  - and an escalation management system
- Give someone **responsibility** for the whole Value Stream
  - to gain agreement to do the right things
  - with the backing to resolve conflicts
  - and deliver results
Leadership from the Top

• Understand the scale of the lean **opportunity** and how to translate this into money
• Use Strategy Deployment to **focus** on the Vital Few
• **Deselect** activities to free up the capacity to act
• Appoint and support a **Value Stream Manager** and Clinical Value Stream leader
• **Resolve conflicts** between Departmental objectives and the needs of the Value Stream
• Go to **Review Progress** regularly
Lean Management

Establish Stability
- Deselect
- Patient Boards

Respond to Variances
- Value Stream Manager
- Plan

Design Experiments
- "Voice of the Provider"
- "Voice of the Patient"
- "Voice of the Staff"

Top Management

Value Stream Management

Line Management
The Elective Surgical A3 Plan

Title: Justification for Middletons's Elective Vascular

What is the Problem?
We need to reduce current RTT from 42.5 weeks to 18 weeks by 01.01.09

Current condition:
382 minutes (0.09%) Treatment Time
V's
428,750 minutes (99.91%) Waiting Time

Target condition:
100% RRT within 18 weeks by 01.01.09

Root cause Analysis:
The waiting times between GP and OPC (75 days) and between OPC and procedure (195 days) represent 88% of the total queue time.

Responsible: DM Team members: JE/JB

Re-Design

Proposed countermeasures:
• Create Stability tho' Ops Management
• Create 'One Stop' combined OPC and PAC - Continuous Flow
• Introduce sequential Pull where we cannot Flow
• Create a Single Point of Schedule (Pacemaker)

Plan:

Follow Up:
• Additional Clinics and Theatre Slots will be required to Burn Off the existing queue

Agreed by: JB Date: 10/12/07
The Potential Results

• From redesigning the emergency and elective journeys:
  – For **Patients** – seen quickly, no waits, no errors
  – For **Staff** – more care time, less frustration
  – For the **Hospital** – meet access targets, free up 30% of capacity, do more elective work, reduce Bank and Agency spending and meet budget targets

• But this is just the start – spread to support functions
  – **HR Recruitment** – new staff in post quicker
  – **Finance** and Admin – streamline office processes
  – **Procurement** – 30% savings in stock and wastage

• *Then spread lean across the whole healthcare system*
The Healthcare System

HOME NURSING HOME

GP

EMERGENCY

ELECTIVE

PRIMARY CARE UNIT

INJURY UNIT

ASSESSMENT UNIT

PATHOLOGY

THERAPIES

PATHOLOGY

THERAPIES

INJURY UNIT

ASSESSMENT UNIT

CLINIC

IMAGING

IMAGING

CLINIC

PHARMACY

SUPPLIES

PATHOLOGY

THERAPIES

PATHOLOGY

THERAPIES

IMAGING

IMAGING

CLINIC

PHARMACY

SUPPLIES

PATHOLOGY

THERAPIES

INJURY UNIT

ASSESSMENT UNIT

CLINIC

IMAGING

CLINIC

PHARMACY

SUPPLIES

PATHOLOGY

THERAPIES

EMERGENCY DEPARTMENT

MAU

SUA

MEDICAL WARDS

SURGICAL WARDS

OTHER WARDS

OPERATING ROOM

DISCHARGE

DISTRICT GENERAL HOSPITAL

REHAB UNIT

HOME NURSING HOME

SUPPLIES WAREHOUSE

SOCIAL SERVICES
In Conclusion

- Lean is the journey for this next decade
- It will have a profound impact on healthcare
- It will also change the way we manage organisations
- And become the "New Common Sense"
REALIZING THE POTENTIAL OF LEAN THINKING IN HEALTHCARE

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www.leanuk.org