Using lean to improve Handovers in Bolton

Joy Furnival and Jo Bolger Leece

Bolton Improving Care System
“We’re not Japanese and we don’t make cars”
‘Real’ Lean

- Philosophy and ‘Belief’ about quality improvement
- Key principles of Delivering Value and Respect for People and Society
- Pillar of Lean – ‘quality right first time’ (*jidoka*)
- Paradigm of Standard work
- **Safety** is a key element
- Team Based
- Nobody has 0% waste
Royal Bolton Hospital and Economy

• Foster Belief and Mindset:
  – *We can all improve and it can be better for patients, carers, staff and stakeholders*

• Develop systematic and consistent approach to support culture of improvement and safety

• Bolton Improving Care System (BICS) based on Lean principles creatively adapted to healthcare

• We’re learning how to do this!
BICS Approach

• Quality is the driving force
• Organisational Development Strategy
• Trying to hold the tension between ‘control and certainty’, and ‘creativity and innovation’
• ‘Bottom up’
• Executive ‘Go and See’
Handover Improvement in Bolton

• Large scale communications programme raising awareness of SBAR and Handovers
• Pilot Area Volunteers / Mapped to Gap Analysis
  – Key ‘Waste’ identified in BICS Value Stream Maps
  – GTT - biggest risk is Re-admissions
• Facilitated local teams to use BICS to tackle issues
  – Ward Based Handovers
  – A&E Handovers
• Similar Approach in Community, with handovers from GPOOH to RBH and to/from Intermediate Care as pilot areas.
Scope: Define ‘Handover’

How many Hand-off’s / Process Flow Connections for one patient pathway?
Reason For Action and Current State

• Improving Daily ‘Handover’ on Wards between different staff groups to improve safety
• Pilot Area: Respiratory
  – High Mortality Rate (118 baseline 2008/09); 21% deaths whole health economy
  – Low Morale
  – Excess Length of Stay compared to peer group
  – Readmission Rate 9.5%
• Lean Concepts ‘Hand Offs’ and ‘Comms Cell’
• ‘Waste Data’ collected over 2 months indicated ‘discharge process (hand off), one of biggest areas of waste’ (using Productive Ward data sampling tool)

Copyright (c) Royal Bolton Hospital NHS Foundation Trust 2011
Solution Approach and Rapid Experiments: ‘Patient Gateways’

- Aim to improve safety, mortality, involvement, pace and reduce interruptions, delays and rework
- Introduced daily multidisciplinary board at 11:30am
- Recently introduced ‘2nd board round at 4pm’
- Rolled out across all other wards to varying success
Confirmed State: Mortality Trend

Though SMR has been high in the past, respiratory has made significant improvements

SOURCE: Internal information from data department; Dr. Fosters; team analysis

Copyright (c) Royal Bolton Hospital NHS Foundation Trust 2011
Confirmed State: LoS Trend

Time Series Plot of D3 Length of Stay 1/4/08 to 30/11/10

Copyright (c) Royal Bolton Hospital NHS Foundation Trust 2011
‘Time to Care’ Impact

Improvements noted in New ways of working

<table>
<thead>
<tr>
<th>Areas noted Improvement</th>
<th>Baseline</th>
<th>New Way</th>
</tr>
</thead>
<tbody>
<tr>
<td>Time on Ward / per week</td>
<td>26.25</td>
<td>52.5</td>
</tr>
<tr>
<td>Reduction in Handover Time per week</td>
<td>15</td>
<td>2.5</td>
</tr>
</tbody>
</table>
Qualitative Feedback

- “We feel more organised, and get off on time” – Junior Medical Staff
- “This is wicked we have more time with patients” – HCA
- “Best improvement I have been involved with” – Social Worker
- “I knew we would improve – but not as much as we did – it gives you courage to go that step further” – Brian Bradley, Clinical Lead

- “I have been a patient here for the past 30 years, care has always been good. But the changes now on the ward are marvellous, you seen a Consultant every day, you know what is going on, and can action things sooner if necessary.” – Brenda (patient)
Example 2: Emergency Department (ED) Handovers

• Aim to reduce harm by improving handover at the interface between departments;
  – laboratory medicine and ED
  – ED and wards
• Reducing anxiety and delays in treatment due to diagnostic communication errors and poor handovers
• A key aim was to ensure the timely and accurate diagnosis for patients
“how did I ever make it out of the hospital!”
Safe clinical handovers?

- Strained relationships between laboratory and Emergency Department
- No structured coping mechanisms in place to deal with adverse incidents
- No visual trigger for Emergency Department staff to see when blood results were available
- Variation in information handover dependent on what staff were working

Handover becomes a very dangerous time for patients
Time taken to view results once processed by ED staff as a result of the MONSTA visual management system reduced from a maximum of 110 minutes to a maximum of 10 minutes.
A 74% reduction in time from blood tests being taken to results being read enabling earlier diagnosis and decision making

<table>
<thead>
<tr>
<th>PRESENTING COMPLAINT</th>
<th>REQUEST CODE</th>
<th>FBC</th>
<th>Glucose</th>
<th>U+E, LFT, Calcium</th>
<th>Amy</th>
<th>CRP</th>
<th>TTFs</th>
<th>Trop I</th>
<th>Alc</th>
<th>INR</th>
<th>D-Dimer</th>
<th>Group &amp; Save</th>
<th>Par sal &gt;4hrs</th>
<th>Serum BHCG</th>
<th>ECG</th>
<th>BM</th>
<th>MSU/hCG</th>
</tr>
</thead>
<tbody>
<tr>
<td>Abdominal pain</td>
<td>AP</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CVA / TIA</td>
<td>CVA, or TIA</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Palpitations</td>
<td>PALP</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Chest pain &lt; 12hrs</td>
<td>CP</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Chest pain &gt; 12HRS</td>
<td>CP12</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>?PE / DVT</td>
<td>IPUL T</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Short of breath</td>
<td>SOB</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PV Bleed / ?Ectopic</td>
<td>PVB</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Collapse ?cause</td>
<td>COLL</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>General illness</td>
<td>ILL</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Diabetic crisis</td>
<td>DIAB</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Poisoning</td>
<td>OD</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>G1 bleed</td>
<td>GIB</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fits / Syncope</td>
<td>LOC</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Haematuria</td>
<td>HU</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Retention</td>
<td>RTN</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Major epistaxis</td>
<td>NOSE</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Major fracture</td>
<td>FRAC</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Severe infection</td>
<td>INF</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pyrexia ?cause</td>
<td>PYR</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Neutropenia /Chemotherapy</td>
<td>NEUT or CHEM</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Warfarin / Liver disease</td>
<td>WAR or LIV</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Copyright (c) Royal Bolton Hospital NHS Foundation Trust 2011
It's all about the team culture
Reflections

• 100000’s of handovers every day
• 100% consistency/reliability in this process potentially very challenging
• Want to encourage ownership and innovation in developing safe handover solutions not imposing ‘top down’ standard work for compliance – although acknowledge risk to this approach.
• Hard to work across Health Economy despite surface level similarities – ensuring patient centredness helps reduce conflicting priorities
• Mindfulness that patient care is being handed over – not a process – sometimes deviation from ‘Standard’ is both necessary and appropriate
A new role for “lean” leaders
THANK YOU – ANY QUESTIONS?

Want to know more? Visit www.royalboltonhospital.nhs.uk/bics