Striving for Excellence
Succeeding with lean thinking in healthcare
Lesley Doherty
Chief Executive, Bolton NHS FT
What can engineers do in healthcare?
Who are we?

About Bolton

• Bolton population 270,000
• Northern industrial town and related health legacy
• Catchment approx 350,000
• 12% ethnic minority population (>18% childhood population)
• Reflected in health status
  – SMR Cancers – up to 123
  – Circulatory disease – up to 136
• Manchester – 2.5m population

About Bolton NHS FT

• Integrated care organisation - Foundation Trust (from 1/7/11)
• Approximately 750 acute beds
• 2011/12 £270m turnover
• Busy emergency service, 110k attendances
• Community, secondary and some specialist services
• Circa 1,000,000 patient contacts pa
• *Pioneered the use of* *lean thinking in the NHS*
Vision – True Norths

2005 - Royal Bolton Hospital 2011 – Integrated Provider

Evolving yet constancy of purpose
All work is a process. This is also true of healthcare.
The NHS is full of committed staff who struggle to deliver good care within a set of broken processes.

For us Lean aims to tackle this by:

“Respect for People & Society” & “Continuous Elimination of Waste”
Bolton Improving Care System

- Based on ‘The Toyota Way’ & ‘Toyota Production System’
  - 2 key aspects: reduction of waste & respect for people
- Started six years ago, for Mortality Reduction initially, now spread to all aspects of quality improvement
- Bolton internationally recognised as a leader in lean healthcare implementation via ‘BICS’
- It is our evidence based improvement approach and philosophy
- Winner European PEX 2012
- Best Improvement Programme > 2yrs
Lean flow cell adapted for healthcare

VISUAL MANAGEMENT:

1 PIECE FLOW

STANDARD WORK

6 S

PULL SYSTEMS

Move away from batching, backlog and queues.

Reduce variation & complexity.

Sort

Straighten

Scrub

Safety

Standardise

Sustain

“ability to see the process”

Create signals to pull patients. Obvious when something empty.
Strategic Approach

• Board Level commitment
• Whole organisational approach linked to Trust Values
  – ‘Patient at the heart’ of what we do
• Fundamental cultural transformation built on engagement
• Development of BICS – lean for healthcare
• BICS Academy
• Dedicated ‘Lean Team’
• External Partner for lean expertise and recruitment of industry lean leader with NHS experience – aiming to become self-sufficient – largely now achieved
• Will to develop a continuous system for improvement
• Use of A3 Thinking & Policy Deployment
‘We’re not Japanese and we don’t make cars’

- Challenge in 2005 – how to contextualise lean for healthcare – perception all about saving money!
- Saving ‘100,000’ lives Campaign
- Challenging conversations with Unions regarding job security
- Adaptation of language, jargon and development of approach required – BICS developed – mostly lean but some healthcare style mixed in!
- Visit to US Healthcare organisation trying out lean to learn from them – ‘go and see’ and lots of exposure via Masterclasses and conferences
- Focus on the Patient – lean is about QUALITY
Patient at the Heart

• Defining ‘Value’ from the patient’s perspective
• Patient Experience Based Design
• Patients as part of improvement teams
• ‘100 Voices’ - monthly
• Gemba Walks (‘Go and See’)
• Exemplar Programme: Regular Audit and Countermeasures
• Safety Express – eliminating preventable harm
The System Bit!

- Systemising improvement – creating improvement ‘takt’

Annual Review
‘Hoshin Kanri’

Strategy to 5 yr goals

‘Value Stream’

‘Rapid Improvement Events’ build the lean cells

PDCA

LEAN LEADERSHIP AND CONTINUOUS IMPROVEMENT

PDCA
Hoshin Kanri - Policy Deployment

- Dialogic consensus building regarding priorities ‘catchball’
  - (approx 600 people (10%) involved over 3 months)
- Annual planning
  - “Vital Few”
  - What are we stopping
  - Improvement work aligned to strategic priorities
- Visual Management
  - Measurement
- Holding to account
- Link to Transformation Priorities and
- Resource allocation & alignment
BICS Academy

• Established in 2008 in partnership with Simpler to build capacity and capability for BICS - improvement and leadership skills
• Levels from Green to Platinum, mapped to LERC Lean Competency Levels & NHS Knowledge and Skills Framework (KSF)
• Green mandatory for all staff – Induction & and introduction to improvement culture
• Focus on Learning by Doing – practical application of theory and reflection
• 2011- Mostly in-house delivered
• Increased focus on knowledge management and sharing of best practice
• Pioneering Junior Doctor Leadership Training
• Communications Approach & ‘yokoten’ for best practice sharing
Lean Leadership – Cultural Transformation

- Integrated learning and development via BICS Academy and Organisational Development – support for all our staff
- ‘The Big Conversation’, appreciative enquiry dialogic approach, in partnership with Staffside leading to values development
- Focus on lean behaviours and lean leadership
- Development of Coaches within the organisation
- Board level leadership – visible and active e.g. involvement in Mission Control, BICS RIEs and Gemba Walks
- Exemplar Programme – Developing Dispersed Leadership
- Building BICS into recruitment and assessment processes and job descriptions
Ensuring a balanced view: Board Assurance

• Board level sponsorship of all improvement cycles
• Board participation in events
• Inbrief, Midweek Outbrief, Outbrief
• Reporting mechanisms: Mission Control, weekly status reports, Exec Board
• Gemba walks
• Strategy deployment: catchball to set goals
The Bolton Way - Driving sustainable quality, safety & productivity

VALUES
- Lean leadership values & behaviours
- Pull systems
- Gemba walk
- Flow
- 6S
- Visual Management
- TAKT Time
- Standard work
- Load levelling
- Yokoten
- Daily problem solving

STYLE
- Staff engagement & empowerment

SYSTEMS, PROCESSES & TOOLS
- Policy (strategy) Deployment
- Benefits tracking & realisation
- Exemplar Programme
- Rapid improvement events
- BICS Learning & Development Academy

ENABLERS

CONTINUOUS ELIMINATION OF WASTE
- RESPECT FOR PEOPLE & SOCIETY

TRANSFORMATION IMPROVEMENT CULTURE
- PATIENT AT THE CENTRE OF ALL WE DO
## Transformation: High Level Results

<table>
<thead>
<tr>
<th>Strategic Aim</th>
<th>Measure</th>
<th>2004/5</th>
<th>2010/11</th>
</tr>
</thead>
<tbody>
<tr>
<td>Quality - Best Care for Better Health (BCBH)</td>
<td>Mortality Index (HSMR) Dr Foster</td>
<td>Unmeasured in 2004 05/06 – 122.3 (April 05, 138.8)</td>
<td>103 (Dr Foster) ‘Most Improving Trust in England’</td>
</tr>
<tr>
<td>Delivery – BCBH</td>
<td>Waiting Times</td>
<td>425 inpatients waiting longer than 6 months for surgery</td>
<td>Delivery of National Waiting Time Standards</td>
</tr>
<tr>
<td>Money - Responsible Use of Resources</td>
<td>Surplus/Deficit</td>
<td>£7M structural Deficit Financial Turnaround</td>
<td>£1.9M Surplus</td>
</tr>
<tr>
<td>Patients - Valued, Respected and Proud (VRP)</td>
<td>Annual Health Check</td>
<td>05/06 Fair (Amber) Risk Rating</td>
<td>Care Quality Commission (CQC) Green (Highest) Risk Rating</td>
</tr>
<tr>
<td>Staff - VRP</td>
<td>Appraisal (Staff Survey)</td>
<td>61% had an appraisal</td>
<td>90% had an appraisal</td>
</tr>
<tr>
<td>Staff - VRP</td>
<td>Improvement Skills</td>
<td>Negligible</td>
<td>&gt;3000 commenced in BICS Academy (&gt;50%) ‘Multiple Award Winning’</td>
</tr>
</tbody>
</table>
Sustainability? 2011/12 - Mixed results

- Mortality rate reduced from 122 (08/09) to 103 (10/11)
- Lowest reference costs for Acute services within NW (84) – although further £15M to save in the Trust in 2012/13 – challenging only one acute area higher than 100.
- Good performance in both National Staff Survey (top 20%) and Patient Surveys (92% rate good or better)
- 2011 a year of recognition for lean work – 2x HSJ Awards, 1 x BMJ Award, 1 x Nursing Times Award, 1x Process Excellence Award, and runners up/shortlisted for several.

**but**

- Performance issues, struggling to maintain waiting time promises for both 18w RTT and 95% 4 hour wait, impacted financially through penalties
- Areas of significant concern for ourselves, our commissioners and our regulators

- **Long way still to go to being lean**
## Case Studies (1) – Clinical Areas

### Unplanned Pathways - Respiratory

<table>
<thead>
<tr>
<th>Measure</th>
<th>2009/10</th>
<th>2010/11</th>
<th>2011/12</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>LoS</strong></td>
<td>8.9 days</td>
<td>6.9 days</td>
<td>7.8 days</td>
</tr>
<tr>
<td><strong>Dr Foster CHKS</strong></td>
<td>6.4 days</td>
<td>5.7 days</td>
<td>5.8 days</td>
</tr>
<tr>
<td><strong>Mortality (HSMR)</strong></td>
<td>119</td>
<td>91</td>
<td>79 RAMI</td>
</tr>
<tr>
<td><strong>Readmissions</strong></td>
<td>9.5%</td>
<td>8.5%</td>
<td>8.2%</td>
</tr>
<tr>
<td><strong>ICU Escalation</strong></td>
<td>101pts</td>
<td>64pts</td>
<td>57 pts</td>
</tr>
<tr>
<td><strong>Home Visits (per month)</strong></td>
<td>38</td>
<td>58</td>
<td>92</td>
</tr>
<tr>
<td><strong>RNS Time to Care</strong></td>
<td>26.25 Hrs/wk</td>
<td>52.5</td>
<td>52.5</td>
</tr>
</tbody>
</table>

### Planned Pathways

#### Short Stay & Surgery

<table>
<thead>
<tr>
<th>Measure</th>
<th>2010</th>
<th>2011</th>
<th>% Change</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Theatres Utilisation %</strong></td>
<td>68%</td>
<td>76%</td>
<td>8%</td>
</tr>
<tr>
<td><strong>Theatres Overtime cost/month</strong></td>
<td>£34599</td>
<td>£21175</td>
<td>38%</td>
</tr>
<tr>
<td><strong>Theatres Stock Held</strong></td>
<td>£79599</td>
<td>£21175</td>
<td>73%</td>
</tr>
<tr>
<td><strong>Day Case Throughput</strong></td>
<td>+300 (2010)</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Short stay &lt;23 hours</strong></td>
<td>59%</td>
<td>97%</td>
<td>64%</td>
</tr>
</tbody>
</table>

Similar results in other pathways, e.g. #FNOF, Gastroenterology, Stroke

*Approx „saving“ £300 per bedday saved over whole Trust LoS work alone, estimated to save >£2M in 1 year and old bed stock closed.
## Case Studies (2) – Clinical

### Outpatient / Health Records

<table>
<thead>
<tr>
<th>Measure</th>
<th>Before (Sept 10)</th>
<th>After (March 11)</th>
<th>% Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Waiting Times – 5 surgical specialities</td>
<td>Avg 7 Weeks</td>
<td>Avg 4 Weeks</td>
<td>57%</td>
</tr>
<tr>
<td>Answered calls</td>
<td>64%</td>
<td>93%</td>
<td>29%</td>
</tr>
<tr>
<td>Short notice app’ts</td>
<td>0</td>
<td>388</td>
<td>&gt;300%</td>
</tr>
<tr>
<td>Electronic Triage</td>
<td>Avg 1 wks</td>
<td>1 day</td>
<td>85%</td>
</tr>
<tr>
<td>Missing Case notes (focused areas)</td>
<td>50/week</td>
<td>5/week</td>
<td>90%</td>
</tr>
<tr>
<td>Savings</td>
<td>£187k cash</td>
<td>£341k income</td>
<td></td>
</tr>
</tbody>
</table>

### Childrens Mental Health Services

- Waiting times reduced to 8 weeks from 22 weeks
- Provision of clinics across the week offering more choice, same/next day clinics
- Service Experience Questionnaire responses
  - Child (June) 88% were certainly true responses
  - Parent (June) 94% were certainly true responses
- Rapid completion of correspondence
  - Winner – British Medical Journal 2011 Leadership Award

• Joint Winner National HSJ Efficiency Awards 2011 with similar work in District Nursing
Case Studies – ‘Back Office’

HR Services

<table>
<thead>
<tr>
<th>Measure</th>
<th>Before</th>
<th>After</th>
<th>% Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Advert to contract within 90 days</td>
<td>39%</td>
<td>78%</td>
<td>50%</td>
</tr>
<tr>
<td>Occupational Health referrals seen &lt;12 days</td>
<td>15%</td>
<td>80%</td>
<td>433%</td>
</tr>
<tr>
<td>Customer Satisfaction</td>
<td>72%</td>
<td>95%</td>
<td>32%</td>
</tr>
</tbody>
</table>

Estates - Maintenance

<table>
<thead>
<tr>
<th>Measure</th>
<th>Before</th>
<th>After (90d)</th>
<th>% Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maintenance Call Response &lt;24hrs</td>
<td>46%</td>
<td>100%</td>
<td>117%</td>
</tr>
<tr>
<td>Statutory PPM* Compliant (Blue Zone)</td>
<td>52%</td>
<td>95%</td>
<td>83%</td>
</tr>
<tr>
<td># Non urgent requests to helpline/month</td>
<td>98</td>
<td>33</td>
<td>66%</td>
</tr>
</tbody>
</table>

Wide diversity of work across all aspects of healthcare organisation and value streams e.g. Finance, Laboratories, IT, electricians etc.

*PPM – Planned Preventative Maintenance Routine
Next Steps

• Adapting, spreading and sustaining BICS across whole integrated pathways in new organisation
• Working with Social Care - Allowing further ‘real’ end-to-end working
• Supply chain for clinical products
• How to work increasingly in partnership with patients and redesign for experience too – really focusing on value
• Further work to align corporate functions into value-streams
• Increasing focus on behaviours and cultural change – building sustainability through focus on continuous improvement and engagement everyday.
• Leveraging capability for the tough times ahead – Public Sector Austerity
• Benefits Tracking and Realisation
• **Being** a lean organisation
Reflections

It’s too compelling to ignore:

• It has to be a cultural change
  – Board and lean team leading by modelling behaviours
• It has to be values and behaviourally led built on engagement
• It requires leaps of faith
• It requires leadership courage
• **It saves lives**….and money (>£9M at least)
• **Lean is all about people and all about quality**