The Jack Spratt Problem: The Potential Downside of Lean Application in Healthcare-A Threat to Safety II

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Origins of Lean


- The *Toyota Production System*: reduce waste (muda); stabilize uneven demand and variation (mura); improve working conditions to avoid worker stress (muri).

- New tools, e.g. ‘takt (cycle) time’, ‘value-stream mapping’, ‘JIT’

- North Americans intrigued with this approach spent time in Japan: “industrial tourists” (John Seddon, 2008)
WHY LEAN

• The avoidance of “waste”: time and resources-not a new idea (Taylorism)

• Healthcare systems are increasingly challenged to deliver better care to more people using fewer resources

• it is no surprise that Lean, with its package of “tools” to reduce ‘waste’ has been very compelling.
THE PROBLEM

• The uncritical acceptance of Lean in a service context, which in North America tends to be associated more with efficiency as a “value”, has been met with concern from front-line workers about how it is being implemented in healthcare.

• Efficiency is a means not a goal.
Experience with Lean

- ‘success stories’ many anecdotal and often one offs (ED, OR, clinic)

- Little formal evaluation using rigorous designs or analysis (Young and McClean, 2008; Proudlove et al, 2008; Radnor and Walley 2008; Vest and Gamm 2009; de Souza 2009; Mazzocato et. al. 2010;; DelliFraine et.al 2010; Radnor, Hollweg, and Waring 2012).

- critical reflection is needed whether Lean is relevant to healthcare and if so how – Ohno did not think in terms of tools, targets or plans: “Write nothing down!” T=Thinking
A critical look at Lean application in healthcare – basic issues

- Lean in a service environment (professional intensive, highly dynamic & complex) such as healthcare is problematic

- Value is central to Lean thinking- but whose value is paramount? And is it fixed?

- Greater emphasis on value/waste than flow/variability

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A critical look at Lean in healthcare – basic issues:

- Uncontrolled variance (processes or outcomes - mura) perceived as the major cause and failure in healthcare.
- Control is generally imposed by management - policies and procedures.
- Adaptation is reduced to create ‘value’ which is seen as a fixed (not emergent) property.
A critical look at Lean application in healthcare

- Performance variability is a necessary feature of complex adaptive systems.

- a gap between “the work as imagined” versus “the work as done” (Hollnagel, 2009 and 2010; Cook, 1998 and 2012; Dekker, 2008).

- Applying the Lean tools (often rigidly) without understanding how the work gets done can reduce the capacity to adjust to surprise (pure muda)- a threat to Safety II (everyday work)

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Examples: potential problems

• identifying the customer – creating value for staff (convenience), organization (efficiency) or patient (appropriate, timely care or satisfaction)

• understanding how everyday work gets done – reducing time for patient intake process in a cancer clinic led to longer patient waits (bullwhip effect)

• Uncritical adoption of ‘tools’ without consideration of local context: ‘Just in Time’ delivery of tracheostomy tubes?

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Implications

- Trade-offs: whose value?
- Reduction in performance variability in complex systems - development of systems through standards, rules and procedures (Lean) - problem of tight coupling
- the capability to adapt to changing conditions (Resilience). Need for slack
Implications (con’t)

• Fill the knowledge gap between the rollout and impact of Lean in healthcare

• more formal evaluation of Lean including Return on Investment (Where is the money?)

• Beware of targets—they paradoxically produce waste

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Lean: some thoughts re WAI VS WAD

- In theory Lean should re-imagine the work done to reduce waste, unnecessary variation and manage demand.

- If frontline staff are insufficiently involved (or the agenda Lean is simply to save money) then WAI will remain quite different from WAD.

- If frontline staff are directly involved in Lean then the gap could narrow between WAI and WAD.

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Thank You

• What has been your experience with Lean?
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