

## Editorial

# Some challenges facing Lean Thinking in healthcare

While improvement methods have delivered higher efficiency and better quality products, the question of applicability in healthcare is still clouded by uncertainty. Traditionally, there have been opposing views: on the one hand promoting large-scale industrial-type improvement to bring healthcare into the modern era and, on the other, arguing that people are not motor cars and that simplistic adoption will only exacerbate the extreme difficulties of delivering uniform, high-quality, care within tight resources to populations whose expectations continue to rise.

Lean Thinking originated with Taiichi Ohno [1], focused initially on operations management. Laursen *et al.* [2] describe how Lean Thinking reached operations around 1992, services around 1996 and the medical domain in the early 2000s. Its five steps to improvement are based on the concept of producers who create value ‘in terms of specific products with specific capability offered at specific prices through a dialogue with specific customers’ [3]. *Value stream mapping* of end-to-end process shows up activities that do not add *Value*, while products should *flow* smoothly from process to process without delay or waste, tackling obvious waste (e.g. repeat activities) and hidden waste (e.g. cost of managing inventories). *Pull* and the quest for *perfection* complete the quintet [3]. As global healthcare expenditure soars above \$3.2 trillion [4, 5], and as systems are increasingly required to deliver better care to more people using less resource, the challenge to explore the promises of Lean Thinking is compelling.

Lean Thinking is now widely recognized in care delivery circles around the world and there is a growing corpus of good news stories, guides and journal papers. As we show elsewhere [6], the adoption trend for Lean in healthcare appears to involve *ad hoc* practice, and so the fact that Lean approaches are widely articulated need not indicate that the process is particularly or exclusively Lean. Staff may, for instance, be describing an improvement initiative generally understood to be within the spirit of Lean. Having said that, there is evidence that improvement methods are bedding down in healthcare.

To bring some focus to what is a fast-moving and perhaps blurred scene, we identify three critical challenges that face Lean if it is to be more widely applied in a more discriminating fashion by delivery communities around the world: evidence, value and metrics.

## Evidence

Adoption of new practices in healthcare is more related to evidence than is the case in managing a factory. In fact, there is an interesting cultural difference between the improvement communities and clinical communities. In medicine, the controlled trial, ideally a randomized control trial (RCT) is the gold standard [7] but need not be large. For instance, one could argue that Christiaan Barnard’s first heart transplant was a clinical trial with a sample size of one and showed that something as extraordinary as transplanting a human heart led to a better outcome than immediate death. In terms of improvement, controlled trials are possible, although there are clearly difficulties in terms of blinding participants and ensuring that trial behaviour and control behaviour stay within limits. A key factor here is the uncertainty inherent in healthcare, leading to a culture of evidence in which the effectiveness of a treatment for an individual patient is difficult to assess and, instead, groups are compared.

The world of improvement is quite different, driven by champions and fuelled with good news stories: ‘the original “gurus” of quality management have been long on prescription but shorter on analysis, and moreover, have differed among themselves’ [8]. This lack of focus on the potential downside of interventions, plus a less complex analytical structure, makes it difficult to provide evidence of effectiveness to clinical communities.

These cultural differences—champion versus researcher, good news versus analysis, trials versus improvement cycles—run deep, and it will take a conceptual effort to provide systems of evidence gathering that will prove conclusive to each side. It will be interesting to see how NHS Evidence (<http://www.evidence.nhs.uk>), a new service to provide evidence-based services across the board, addresses this challenge.

## Value

Although the concept of value is central to Lean, healthcare is a world full of values. We have proposed that there are at least three dimensions germane to healthcare—clinical, operational and experiential value [6]. We further contend that most Lean in healthcare is essentially driven by an operational concept of value, and that the infrastructure does not

yet exist adequately to trade, for instance, an extra day in hospital for a very slightly better outcome or, more difficult still, a better experience.

However achieved, Lean needs a common value currency so that improvement cycles can be driven to better outcomes as well as for better patient experience or efficiency gains.

## Metrics

The key thing about metrics, especially when combined with a system of incentives, is that people try to achieve their metrics. For instance, the UK government expected General Practices to average around 75% in their Quality and Outcomes Framework metrics when the system was rolled out. The initial average of over 91% rose to nearly 97% in 3 years, creating a funding problem [9]. This opens up a range of behaviours (some of which, for instance are addressed by Radnor) and games that people will play in order to meet their metrics [10].

In organizations where metrics already play a significant role there may be less incentive to start experimenting with local, Lean, improvements. However, where such metrics can be channelled into improvement cycles, one of the great strengths of Lean is that it encourages those working at the coal face, so to speak, to focus on increasing value and eliminating waste. Clearly, measurement is needed to show the local team that improvement is taking place (and therefore to guide the process) and also to justify to higher management and other stakeholders that the team is pulling its weight.

The key element, however, is the extent to which the Lean measures align with other key metrics within the institution—human resources and finance, for instance—or the wider values of the organization. Two major problems are the possibility of conflicting metrics on the one hand, where metrics achieved in one field are at the expense of success in another, and of completely disconnected metrics, in which staff members face a mass of incomprehensible and unrelated targets.

## Conclusion

Given consensus on evidence, value and metrics, there is no reason why Lean should not become a vital element in a world that is focused on process, governed by performance measures and, increasingly, guided by a core set of values.

## Acknowledgements

The authors thank Anastasia Anagnostou and Dr Julie Eatock for management of the manuscript and Professor Richard Lilford for his helpful comments.

## Funding

Much of this thinking has benefited from the involvement of the authors in the MATCH programme (EPSRC Grant EP/F063822/1) and the RIGHT programme (EPSRC Grant EP/E019900/1).

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