



the evolution of Lean Thinking in the NHS

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Headline

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Lean thinking is relatively new to the NHS but it is evolving quickly. It started being used to resolve specific problems in hospitals but is now being applied across the boundaries of organisations to improve and redesign complex care pathways.

Ambitious NHS managers recognise that for Lean programmes to be successful, current-state organisational design, change management and knowledge management tools must be adapted to Lean principles and objectives. This is the key to creating sustainable skill-sets, embedding a culture of continuous improvement and ensuring that both people and organisations change quickly enough to make rapidly redesigned processes work.

Atos believes Lean thinking and applications have an important part to play in continuing NHS reform. Lean's potential for healthcare services is only now beginning to be realised. From improving single pathways to leading the way in WCC, Lean and the NHS have a great deal more to offer.

Lean in the NHS

Lean thinking started in manufacturing where it has been used for nearly a century. In the 1970s, it began to be applied in service industries as managers realised that manufacturing methods which were highly focused on understanding business processes and eliminating waste were just as useful for airline and fast-food businesses¹.

Lean also has a history in healthcare and the NHS. Hospital Trusts such as Bolton started using Lean to improve processes like pathology testing and discharge management some years ago. Over the last two years there has been a noticeable increase in interest in Lean thinking in the NHS from both frontline organisations and institutions such as the NHS Institute for Innovation and Improvement, and the NHS Confederation, which commissioned a report on Lean thinking from the Lean Enterprise Academy UK in 2006².

Nevertheless, until recently Lean thinking has mainly been used tactically in health service organisations to address discrete problems rather than look at whole systems. This approach has led to some scepticism and questioning with regard to whether Lean is just a passing fad or merely business process re-engineering in another guise. In this paper, we first of all address these issues in the context of the way Lean has evolved in the NHS and then we offer our own impression of how Lean may develop.

1 Production Line Approach to Service, Theodore Levitt, Harvard Business Review, 1972. Levitt describes McDonalds Restaurants as a 'supreme example of the application of manufacturing and technological brilliance'
2 Lean Thinking for the NHS, D Jones and A. Mitchell, NHS Confederation, 2006

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Developments to date

As of 2006, Lean thinking was positioned to support challenges such as financial deficits, hospital infections, capacity constraints, general inefficiency and public concern about waiting times and cost³. In other words, Lean was primarily considered as a way to alleviate problems in hospitals. While that remains a perfectly valid use, healthcare service providers are thinking more and more about how Lean can be used to address wider issues and discrete challenges. For example, Lean is now being targeted at problems that undermine the delivery of effective healthcare throughout the NHS:

- Long elective waiting lists
- Breaches in waiting times in hospital emergency departments
- High levels of delayed discharges
- Inadequate Lean training and development.

Atos has witnessed how successful these targeted projects and programmes can be. Working with a NHS hospital, we assessed processes for cataract operations and reduced the number of steps from 42 to 35 at most. Waiting times for cataract operations were reduced from 25 weeks to a maximum of 10 - a 60% improvement. Successes of this kind can be achieved with Lean thinking because well-established systematic techniques are brought to bear to improve existing processes. Any and all constraints within the processes are removed and then only the necessary constraints are built back in. Furthermore, improvements can be achieved quickly because Lean focuses on bringing people together and promotes intense scrutiny of problems to create clear and workable solutions.

To date, Lean has been applied in one of two ways. The first application is Rapid Improvement Events. These short, sharp projects deliver quick results without challenging existing management control styles⁴. The second application involves integrating Lean activity with the overall strategy of an organisation and setting out plans for operational improvement across the business over the medium to longer term.

Taking on the commissioning challenge

While Lean thinking has already evolved beyond helping NHS staff to solve discrete, targeted problems in hospitals and elsewhere, it is beginning to be used far more ambitiously. One such application is commissioning care pathways.

The challenges of World Class Commissioning (WCC) require commissioners to identify needs and then procure and contract-manage complex service arrangements from large numbers of suppliers. The processes needed to provide services will invariably transcend the boundaries of an individual NHS organisation. At the same time, the pathways of individual organisations are likely to remain highly variable because local needs, strategies and provision capacities differ considerably across geographical areas.

Meanwhile, historical arrangements in a health economy for condition management may be based on some General Practitioner (GP) management with support from a hospital consultant when the condition worsened - a fairly simple model. But today, commissioners face a demanding challenge to work closely with, and develop shared ambitions alongside, numerous key partners, including local government, healthcare providers and third sector organisations⁵. Well defined pathways are therefore essential to successful WCC because unless they are clearly understood they will be impossible to measure and manage - the key indicators needed to demonstrate commissioning effectiveness and efficiency.

The strong emphasis Lean thinking places on process analysis and joined-up working across functions is therefore very valuable to commissioners: firstly, for analysing existing pathways and then for designing improvements. It also encourages and rewards collaborative thinking and consensus building. Moreover, Lean is highly evidence-based so it appeals to the scientific minds of doctors and their clinical colleagues. This is an important consideration because, as the Darzi review makes clear, patients and the public expect clinicians to be in the lead designing new services⁶.

Lean benefits for NHS teams and patients

Atos' experience in using Lean in pathway analysis and redesign has shown that there are very significant advantages for NHS organisations. The 'sleeves rolled up' style of working with colleagues in a value stream (the activities that must link together to provide benefits to a patient or a patient group) and getting to the heart of process problems in a very practical way delivers a real sense of achievement for everyone involved. Our projects often result in resolutions from NHS teams to communicate more effectively, to share knowledge and to establish permanent change teams to drive home and sustain improvements. Lean is thus far more than a set of useful analytical devices - it is a philosophy and a way of working towards a culture of continuous improvement.

The benefits for patients are self-evident. Reduced waiting times improve overall outcomes, resulting in greater satisfaction with NHS services. And by improving asset utilisation and eliminating waste, taxpayers get a better deal and money is released to invest where it's most needed.

More specific benefits can be seen in the application of Lean manufacturing principles to matters such as infection control and medical errors. Researchers consistently report that around 10% of patients in hospitals experience medical errors of one sort or another and it has been calculated that 1 in 300 inpatients have their death hastened as a result of medical error⁷. Work in the United States employing operational excellence principles used by Toyota, has demonstrated dramatic improvements in patient safety by eliminating ambiguity and work-arounds and improving collaboration across the functions of a hospital⁸.

3 ibid
4 A number of websites provide more detailed descriptions of Rapid Improvement Events (RIEs) including www.institute.nhs.uk
5 World Class Commissioning, Vision, Department of Health, December 2007
6 NHS Next Stage Review: Leading Local Change, May 2008
7 Global Strategies for Global Health Threats, Speech by Liam Donaldson, February 2007
8 Fixing Health Care from the Inside, Today, Steven J Spear, Harvard Business Review, September 2005

A Leaner future?

We predict that Lean thinking will continue to grow in popularity as more managers in the NHS understand its value and recognise that, rather than being a fad, it is an approach numerous industries have successfully employed for a long time. Lean is already replacing many traditional management methods, particularly in sectors where its application is more mature. Tesco, for example, has established itself as market leader by building Lean thinking into long-term strategies for development. Progress with Lean in the US health sector is now starting to build the 'Lean for health' case. We also predict that more sophisticated programmes will be constructed which build in the need to manage change, analyse and restructure organisations and to develop tools to improve knowledge management and sharing.

Conclusion

The NHS reform programme will continue to create the demand for practical and pragmatic, evidence-based methods which can be applied to design, improve and then innovate and redesign care pathways. Properly applied, Lean can be the driving force of a strategy for improving the individual pathways and the overall performance of NHS organisations. It can be used and re-used to ensure that focus is rigorously maintained on:

- ▶ Providing the patient, as customer, with what they need
- ▶ Removing all activity which does not contribute to that goal
- ▶ Constantly improving upon improvements
- ▶ Developing staff who know, appreciate, enjoy and promote Lean.

Consequently, we are of the view that whilst Lean can deliver high quality solutions to specific issues, its greater value lies in placing it at the heart of organisational strategy. Indeed, we are not alone in thinking this⁹.

We are confident that those people in the NHS who embrace the full potential of Lean will reap huge benefits in cost-efficiencies, more motivated and knowledgeable staff, and healthier, happier patients.

About Atos

Atos is an international information technology services company with annual 2010 pro forma revenues of EUR 8.6 billion and 74,000 employees in 42 countries at the end of September 2011. Serving a global client base, it delivers hi-tech transactional services, consulting and technology services, systems integration and managed services. With its deep technology expertise and industry knowledge, it works with clients across the following market sectors: Manufacturing, Retail, Services; Public, Health & Transport; Financial Services; Telecoms, Media & Technology; Energy & Utilities.

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⁹ David Fillingham, Chief Executive, Bolton Hospitals NHS Trust in his presentation to the HSJ Lean Conference (21 May 2008) described Lean in healthcare as a "never ending journey of transformation".