Achieving sustainable improvements the Lean way

Throughout the NHS, Lean healthcare is achieving dramatic results in stretching limited resources, improving the quality of patient care and safety, eliminating errors, reducing waste, cutting delays and reducing the length of patient stays, says **John Woodruffe**

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Lean involves cutting out those factors that are a waste of time, money or resources. It is about identifying and removing non-value added processes and practices to promote only what adds value from the customer's or patient's perspective.

It's not about finding quick, temporary solutions, but concentrates instead on how the work is done and how to eliminate the root causes of delays and other impediments to flow.

As well as improving processes, the Lean philosophy involves a need for continuous improvement involving everybody and often requiring profound cultural change. It requires commitment from the top and Lean leadership but means listening to your people, involving them and empowering them to make changes from the bottom up.

The benefits of applying Lean in healthcare are enormous but, more importantly, improvements are sustainable because it creates a culture of continual checks and improvements.

Lean sceptics question why a methodology originating in manufacturing can succeed in the very different environment of healthcare. But in reality both environments run complex processes where the scope for errors, quality problems, poor communication, waste and the failure to put the customer first is huge. Everything we do in healthcare – procedures, appointments, bills – is a process. Success comes from finding out how to do it better.

The Manufacturing Institute's Lean healthcare team has achieved powerful results in partnership with UK hospitals. One of them is Blackpool, Fylde and Wyre Hospitals NHS Foundation Trust pharmacy where Lean is helping the team to realise performance benefits from the installation of an automated dispensing system.

Work began with value stream mapping that highlighted a robust future state system for installation of the automated dispensing system and beyond – bringing smooth single piece flow to the dispensing process and halving the time required to prepare prescriptions.

Lean methodologies have also been applied to capacity planning to ensure full utilisation of facilities and to improved workplace organisation using visual management and 5S techniques. New key performance indicators have also been introduced to measure automation reliability, workload levels and stock control of medicines.

Lean pharmacy projects have also brought benefits to the Royal Devon and Exeter NHS Foundation Trust where inventory levels have been cut and process flow has been improved through a new Lean layout, cutting an average 70 minutes from the process of preparing prescriptions.

At West Middlesex University Hospital Trust, the HR team has applied Lean thinking to tackle universal issues of sickness and absence rates and recruitment lead time.

Process flow mapping, root cause analysis and visual management techniques are some of the strategies that have been used to shrink recruitment lead times from up to 9 months to a standardised 53 days.

A new sickness and absence management process has reduced the rate from 3.9% to 3% and has the potential to make significant financial savings.

"Making changes in practice is one thing but making sustainable improvements is altogether a more difficult challenge," says Nina Singh, director of workforce development for West Middlesex.

"Our work with the Manufacturing Institute has been invaluable in understanding how to achieve long term change and how to continuously improve standard practice."

Lean principles are also improving standards and efficiencies in medical diagnostics. The Manufacturing Institute has been working with staff in radiology departments, endoscopy suites and specimen labs to consider how they can develop work processes and maximise their contribution to patient care.

"The Manufacturing Institute showed us how the principles that have transformed manufacturing industry can revolutionise healthcare by eliminating waste, increasing efficiency and delivering improved quality and patient care."

Teresa Hopley, senior personnel manager, Stockport NHS Foundation Trust

One example is the Royal Devon and Exeter ultrasound department where opportunities were identified for better utilisation of this important asset. Constructive problem solving and process redesign was employed to increase throughput. This improved the quality of interaction between patient and doctor while bringing down individual consultation time from 24 to 15 minutes and eliminating the need for extra evening and weekend sessions.

Stockport NHS Foundation Trust has integrated Lean methodologies into its long-term business improvement model. With support from The Manufacturing Institute, it set up the Stockport Improvement Programme, committing at the highest level to a powerful programme of change.

As such, it firstly worked with The Manufacturing Institute at an executive level on its Lean leadership development then appointed and trained fifteen 'Stockport improvement champions' who undertook The Manufacturing Institute's intensive *accelerated route to Lean healthcare* 10-day training course in preparation for supporting a series of projects.

Lean implementation began with value stream mapping within two key departments of orthopaedics and emergency medicine. By analysing the patient journey both inside and outside the hospital - from PCT referral through all the complex steps to discharge – a complete and detailed picture of the process and the waste within that process emerged. Supported by The Manufacturing Institute, the SIP team was able to create an ideal future state map to eliminate all the non value added steps.

Issues identified through the value stream mapping were tackled through rapid improvement events, including reduction in the overall lead time from referral to discharge, time taken for call centre to confirm outpatient appointments and medical records and storage capacity.

The early benefits of this work include a 33% increase in throughput in radiology, 64% reduced time to prepare intravenous drugs and 33% increased capacity in treatment room areas.