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Quality improvement in action

Lean experience in primary care

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ABSTRACT

The recent introduction and successful application of Lean Thinking in health is generating a belief that continuous improvement (a product of Lean) can be delivered in the context of health care, as long as key organisational principles are in place. This paper offers case studies to illustrate where Lean methods are being introduced into a primary care commissioning organisation and are delivering, as part of an integrated organisational approach that embraces Lean principles and improvement in the patient experience and eliminates the potential for error in patient care.

Keywords: continuous improvement, Lean Thinking, primary care commissioning

How this fits in with quality in primary care

What do we know?
The application of Lean Thinking as a method for improvement in the industrial and commercial world is not new. There have been published examples of its successful application in health; however, few relate to primary care and commissioning.

What does this paper add?
This paper shows how a primary care commissioning organisation has integrated Lean Thinking, as part of a integrated organisational improvement approach, to create capacity and improved capability to improve patient experiences, and increase patient safety and business performance through the elimination of waste.

Introduction

The need for improvement in healthcare practice in the NHS is not new: errors and delays in patient care have marked past practice and continue to do so today.[1–4] External to the NHS, organisational improvement methods, such as Lean Thinking, have strong evidence to show their effectiveness in delivering sustainable improvement and eliminating errors through systematic approaches that utilise staff resources and create change. It is the commitment of external organisations, such as Toyota, to a long-term philosophy of improvement that is making a fundamental difference to their operational effectiveness.[5] In health, there have been a number of internally and externally driven improvement initiatives across the NHS, each aiming to improve quality of care for patients; and yet reports continue to show that mistakes are still occurring and that there is still no coherent system to improvement.[3,6,7]

Drive for safer care

Safe care must be the foundation point for all healthcare practice, regardless of whether such work is undertaken in the presence of patients or not. And yet, many repeated errors continue to be reported.[8] When we examine systems and processes that support patient care, the opportunities for error are surprisingly apparent, and many of these relate to the way we work. Alongside observations in practice, the *Safety First* report commissioned by the Department of Health states that there is still a need for more effective learning from errors and that members of the NHS need to identify a comprehensive and explicit approach to achieving safe patient care that can be measured effectively.[4] Bernard Crump, as lead of the NHS Institute for Innovation and Improvement, is challenging the NHS to find a different way to make improvement happen, so that patients will not be harmed or disadvantaged as a result of uncorrected mistakes.[7]

Improvement has a long history in the UK health service.[1–3] Work in the late 1990s looked at the application of improvement methods in the NHS, focusing on how the existing workforce was utilised and how patients accessed timely care for specific conditions.[9] Almost 20 years on, we are still observing and experiencing inefficiencies and errors in patient care, suggesting that previous improvement approaches have not delivered a sustainable approach to delivering change.[4] Evidence would suggest that successful improvement approaches move beyond the application of tools and engage organisational leaders and their workers through vision, behaviour and their own capability to deliver sustainable change.[5,10] External programmes such as those co-ordinated through the Modernisation Agency, were not positioned, nor did they have the facilities, to bring about such organisational improvement.[6]

In response to the *Safety First* report, Bernard Crump wrote that the NHS had to do something different and identify the *drivers* that will improve the way care is co-ordinated and delivered to patients.[4,6,7] He noted that in every aspect of care we look at, we find an unjustifiable variation in the inputs, processes and outcomes of care; that care is not as safe for patients as it could be or should be.[4,11] For example, we continue to administer the wrong drugs to patients. At the same time, independent commentators report that the patient experience has become better.[12] Although there has been valuable learning from previous improvement programmes (e.g. the Cancer Services Collaborative Improvement Partnership), these have not always been considered by all organisations across the NHS so that all patients might benefit. From experience in practice, it is also evident that changes made during improvement programmes have been not been sustained, often through the absence of organisational support.

The programme approach to improvement provided an *external* organisational resource to support and deliver change. Evidence suggests that sustainable improvement is more likely to be achieved when individuals are motivated, feel valued and feel in control and responsible for change.[13] There is therefore a need for organisations to establish a stable foundation or organisational culture that engages with and supports its workforce and develops the capability for change from within the organisation.[5,10,14]

Why Lean?

Lean Thinking has been principally developed and seen as a successful organisational improvement approach in the commercial world.[15] Toyota, as one of the leading organisations in Lean, has invested in a long-term philosophy to improve its business performance and from its organisational learning has been able to detail 14 principles that underpin their method, known as the 'Toyota Production System'.[10] In addition to a long-term philosophy, the Toyota method has three other cultural themes: seeking to understand and create the right processes for the right results; developing staff and adding organisational value; and continually striving to understand the root cause of problems. One of the principles of the Toyota Production System is 'learning to see': investment in staff trains them how to observe waste in their systems (classified by Taiichi Ohno in Box 1), and to understand the true cause of the problem.[16] Staff are then encouraged to generate ideas for improvement and make changes in their own area of work. It is Toyota's commitment to a long-term philosophy that NHS organisations need to consider – because it is not just the application of the tools and techniques of this system that brings it to life.[10]

Box 1 Taiichi Ohno's seven general wastes[16]

1 Waste of overproduction
2 Waste of waiting
3 Waste of transportation
4 Waste of inappropriate processing
5 Waste of unnecessary inventory
6 Waste of unnecessary motion
7 Cost of defects

Lean health care

The application of Lean Thinking to health care is a recent phenomenon compared to its use in the commercial world.[6,17–19] While there are benefits for its use in health settings, clearly it offers no quick fix: Lean is a learning system with a long-term perspective.[19] Based on their experience of applying a Lean approach in French hospitals, Ballé and Régnier argue that the critical challenge for would-be Lean practitioners is first to understand the underlying concepts and tools of Lean Thinking alongside those of the customer experience and of staff.[14] NHS County Durham has embarked on a similar journey, working in partnership with Virginia Mason Medical Centre, Seattle (which has developed the Virginia Mason Production System[20]) and the North East Strategic Health Authority to develop their own vision and strategy for sustainable continuous improvement capability, supported by Lean methods, but emphasising the commissioning context. The senior leaders in NHS County Durham have a firm belief in the need for improvement and

have documented a clear long-term strategy for achieving sustainable continuous improvement, as well as, recruiting a director of innovation and corporate improvement team to ensure its delivery. Consequently, staff at NHS County Durham are gaining greater insight into their organisational function, learning to see how their business operates, and creating capacity and capability for improvement work to take place as part of daily business. As part of their organisational approach, NHS County Durham is committed to developing the right culture for change to take place. The introduction of a 'leaders as coaches' programme is training staff at all levels of the organisation to realise staff resourcefulness, support change and help develop a high-performing 'can do' culture.[21,22]

The adoption of a Lean philosophy, coaching and a standard approach to improvement projects, provides NHS County Durham with an integrated organisational approach they have named 'Do It Once, Do It Right' – an aspirational goal for their way of working. This approach provides staff with training and on-the-job improvement coaching from employed staff trained in the Virginia Mason Production System, to deliver change identified by the organisational objectives. NHS County Durham is using the principles of the Toyota Production System in a commissioning context to improve patient experiences, to address the current variation that is in practice, and to increase reporting and learning, so that no patient group is disadvantaged by their provider.

Like that of others using a Lean methodology in health, County Durham's early experience has demonstrated that Lean has great potential as an organisational improvement approach and can be applied at all levels of the organisation. However, they also recognise that their organisation is at the beginning of long-term journey to create continuous improvement capability in their organisation.

Lean in practice

In April 2008, three general practices were recruited by NHS County Durham to test their integrated organisational improvement approach in a general practice setting. This included each practice developing its own vision for improvement and establishing an agreed set of behaviours that support improvement. Such behaviours included taking time to observe existing processes in the practice and identifying waste. The principal goals of this partnership were not only to reduce waste and improve the service provided to patients, but to also help formulate what a 'model GP practice' should be.

Case study 1: observing waste eliminates potential for error

Many patients have a need for ongoing medication and blood monitoring in primary care, which often results in changes in care and medication being made by many health professionals. Such changes generate patient queries, which need to be responded to in order to avoid delays in treatment. In response to this, one GP practice looked at how they dealt with the management of results, prescription queries and re-issuing of acute prescriptions. By mapping the current ways of working they found that each of the processes created delays in the continuation of patient care and had potential for error. Observations both leading up to and during the improvement week allowed the senior partner, practice manager and other practice staff to observe these areas of work and identify wastes in motion ('walking'), transportation, waiting, over-processing and potential for error (defects) in their current systems. Ideas then generated by the practice allowed them to test new ways of working, reduce waste and eliminate the potential for error, resulting in a standard approach for prescribing practices and management of results. This was achieved by:

- changing to an electronic process for prescription queries, whereby the general practitioner (GP) now makes direct changes to prescriptions. This has reduced the time taken for new prescriptions to be issued by 48% and has reduced the potential for errors in prescribing
- reducing staff walking by 86%, as non-clinical staff are now removed from the prescribing process
- changing to an electronic process for managing results across all practice staff; this has created a 99% improvement in the time taken from results being received by the practice to results being acted upon.

As a result of being involved in an improvement week, the practice staff support the theoretical view that because they felt in control, they were more motivated to make change. They also recognise that every change idea is worthy of pursuit, because small changes can make a significant difference to they way they work. The improvement week has taught them how to see, measure and make change, and to realise that ideas generated by those who do the job, are most likely to succeed and be sustained.

Case study 2: every patient can receive the same value experience.

The local chlamydia screening team (as part of the national programme) identified the need to examine the administrative support to the screening programme

and, in particular, the management of client results. From the outset, the team established that the value-adding experience for the client was the receipt of results (regardless of whether those results were negative or positive) and, if the result was positive, commencement of treatment. When the team examined their processes, they found that those clients with negative results usually waited up to 10 days longer for notification than those with positive results. By using an 'improvement week' approach, the team was able to map out the daily requirement for clients to be informed of their results, the number of steps taken to receive and process results, the time taken for delivering each step in the process, as well as the total time (lead time) taken to get results to clients. The team observed the waste in their process created by waiting and walking and, more importantly, the patients' experience of delay generated by the systems in place. In their improvement week they:

- achieved a 99% reduction in the time it took to process and inform clients with negative results, which meant that clients were notified on the same day that results were received by the administration team
- eliminated batching of results, and consequently reduced the patient lead time by 9 days, thus increasing the value to clients by 99%
- rearranged the layout of the accommodation so that equipment and storage were close to the point of use, thus reducing staff motion by 86%
- relocated the client waiting area adjacent to the clinic rooms, thus reducing client motion by 25% and releasing a room for staff meetings and rest area.

What this approach has done for both of these clinical teams is create ownership of the improvements made, and it has motivated them to do more. Prior to undertaking this approach, the administrative staff did not see how their actions affected the client experience. However, when they visualised results as anxious clients waiting, they saw the importance of their work in relationship to clients and they realised which aspects of their work added value.

Commissioning a Patient-led NHS and *Safety First* has provided commissioners with a platform to re-establish what patients want and for commissioners to commission services that are patient centred, safe, efficient and provide good value for money.[4,23] NHS County Durham has recognised that, as a commissioner, it is well positioned to drive up quality and patient safety and has begun a transformational journey to do so. The use of a standard project method and coaching, combined with the principles of Lean, has created a foundation to deliver an integrated organisational approach to quality improvement in primary care commissioning, and is starting to create an organisational capability that can sustain continuous improvement. The insights gained from using a Lean approach are not only helping them to improve their efficiency as a commissioning body, but are also helping them to 'commission out' waste and 'commission in' safer care and innovation. Increasing partnership working to develop new service specifications is one possible route to drive improvement of the patient experience. It is only through time and pursuit of perfection that the real benefits of this approach will be realised.

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CONFLICTS OF INTEREST

None.

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