

The way forward

The challenge facing the NHS is easy to articulate. Deliver higher quality within restricted resources. While many may subscribe to the theory that higher quality equals lower cost, turning this into practice across wide-ranging services is a daunting prospect. What they need is a tried and tested toolkit that they can use to drive quality improvement.

One such toolkit is the Virginia Mason Production System (VMPS). A scheme was launched last year by the then NHS Trust Development Authority to support five NHS providers to adopt this approach across their organisations.

The basic approach of the VMPS, which is built on the Toyota lean management system, works on the assumption that it is staff who know what the problems are and have the best solutions. It then uses a number of observation and data analysis tools to describe how patients experience the service. This helps staff identify how to improve the patient's journey. This is tested and, where appropriate, implemented – with the aim of standardising processes wherever possible.

These tools include established quality and lean management techniques such as process mapping, 5S (sort, simplify, sweep, standardise, self-discipline) and SMED (single-minute exchange of die). And they are put to use by multi-disciplinary improvement teams (from consultants down to the most junior members of staff) brought together in rapid process improvement workshops (RPIWs).

Leeds Teaching Hospitals NHS Trust was one of the five trusts selected as part of the TDA initiative, now supported by NHS Improvement. With a recognition that processes need to be adapted to local context, the trust has styled its take on the VMPS as the Leeds Improvement Method.

Julian Hartley, chief executive at the Leeds trust, says that the difference with the Virginia Mason approach, as opposed to earlier NHS improvement initiatives, is the structure. 'There is an absolute focus on patients and respect for people and an incredible rigour and discipline in the system's methodology, which

The Virginia Mason Medical Center in Seattle (pictured below) has won wide-ranging plaudits for the safety and quality of its healthcare. Now a programme in the NHS aims to help five trusts learn from the experts.

Steve Brown reports



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Julian Hartley, Leeds Teaching Hospitals

is all about achieving a level of standardised work to reduce waste and increase value.

'It is about looking at services inch wide but mile deep,' he

continues. 'We are not trying to take on too complex a process, but use narrow terms of reference to achieve a level of depth.'

And he insists it is about changing the way Leeds does business, not about completing an initiative. 'Virginia Mason has been at this for 15 years, it is not about overnight success. But the aim is to, inch-by-inch, get through broken operating processes and redesign those processes by applying standard work.'

Focus of improvement

Leading the way at Leeds has been work on elective orthopaedics – with a focus on total hip and knee replacements – an area highlighted by Lord Carter as offering potential for productivity improvements.

The trust was keen to focus on the day of admission and surgery and staff had set reducing patient waits on the day as a key priority. But it was soon realised that to have maximum impact on this, the team would have to look earlier in the process – at the way theatre lists were constructed and then managed up to the day of surgery.

At the beginning of May, an improvement team made up of nurses, managers and consultants gave its 90-day 'report out' – its third feedback event giving an update of work done to date and lessons learnt since its RPIW at the end of January.

The sense of staff enthusiasm and engagement at the lunchtime event was clear – although they were also open about the challenges they had faced and continued to face. And there was a definite sense that they were fixing things that had both frustrated staff and had had a negative impact on patient experience of services.

The road to Virginia Mason

Virginia Mason Medical Center is a non-profit organisation providing integrated healthcare across Seattle in the US. It has won various awards for clinical quality – making various lists of America's best hospitals for several years running.

Behind these awards and widespread recognition for delivering safe, high quality care is an ambitious system-wide change programme launched back in 2002. It adopted the basic principles of the Toyota Production System, renaming it the Virginia Mason Production System (VMPS).

The programme effectively targets the perfect patient experience, free from errors and defects. It recognises that staff know what the problems are and have the best solutions – so it supports them to identify and implement improvements.

It uses lean management techniques to continuously improve quality and safety, eliminating waste and reducing costs. The benefits are patient-focused – more value-added time spent with providers, less delay waiting to see doctors or waiting for tests, and safer services. Some figures suggest that nurses have increased the average time spent on direct patient care from 35% to 90%.

On launching the NHS link up with Virginia Mason last summer, health secretary Jeremy Hunt insisted he wanted 'to make the NHS the safest healthcare system in the world, powered by a culture of learning and continuous improvement'. He

described the achievements at Virginia Mason over the last decade as 'truly inspirational'.

Sixty-two NHS trusts applied to be part of the programme but just five were selected: Leeds Teaching Hospitals; University Hospitals Coventry and Warwickshire; Barking, Havering and Redbridge University Hospitals; Surrey and Sussex Healthcare; and The Shrewsbury and Telford Hospital.

NHS Improvement medical director Kathy McLean says the focus of the five-year programme is on improving quality and safety. 'But we firmly believe that it will lead to efficiencies as well,' she says. 'We know it takes time. You don't do these things sustainably over a very quick period of time. The experience in Seattle shows that this can take years to really embed.'

The selected trusts are being supported by the Virginia Mason Institute (VMI), set up by Virginia Mason to support the application of its approach across other healthcare bodies. They receive intensive training in the method and support from a VMI 'sensai'. But the aim is for the trusts to be able to deliver the training to their own staff and build a sustainable culture of continuous improvement.

Dr McLean admits that 'over time it is hoped the NHS cohort can help others to learn from them' – becoming exemplars of the approach. However the five trusts are not the first to adopt the Virginia Mason methodology in the NHS.

A previous system-wide

partnership in the North East was set up in 2006. Although it was hampered by some structural changes when the strategic health authority was abolished, a number of local organisations have had success with the system. Tees, Esk and Wear Valleys NHS Foundation Trust is one example (see *Healthcare Finance* September 2013, page 13) and the North East System Transformation team continues to be hosted by Gateshead Health NHS Foundation Trust.

Dr McLean says other trusts around England have also worked with Virginia Mason – including Western Sussex, which recently became one of only three acute trusts to be rated as outstanding by the Care Quality Commission – or have used the approach to some extent.

A recent King's Fund report – *Improving quality in the English NHS* – called for a 'coherent and integrated strategy' on quality improvement. This would need capability to be built in all NHS organisations with support provided regionally and nationally. The NHS Improvement programme may not deliver at this scale, but it is a good step in the right direction.

The RPIW on theatre list order changes was a direct reaction to the realisation that about 80% of the operation scheduling team's time for these procedures was taken up with dealing with patient cancellations – often in the week running up to the scheduled procedure. This would leave the scheduling and pre-assessment teams making multiple calls to line up a replacement and sort out the necessary pre-assessments.

In some ways, this wasn't surprising given the process in place. The decision to operate would be taken at an outpatient appointment, at which point a patient was put on the inpatient waiting list. This then effectively became an administrative task of finding an available timeslot that complied with national referral-to-treatment targets.

Adhering to internal policies, a letter was then sent to the patient three weeks before their operation date. For many patients this was simply too little notice, leading to cancellations in some 10% of cases.

Rescheduling surgery

One of the ideas hatched in the RPIW that the improvement team was keen to test was for consultants to take their surgery diaries into outpatient consultations and to give patients a date for their operation immediately.

This has been a significant success. Patients are now typically getting six weeks' notice and of 120 patients 'dated' by the beginning of May, 39 had had their surgery and just three had cancelled. Building slowly, the approach has been rolled out to involve nine consultants.

This small change has already had a major impact on the scheduling team. With list churn minimised, it is now spending just 10% of its time on rescheduling patients. This frees up time to spend more proactively preparing surgeons' diaries ahead of outpatient clinics. And the scheduling team can also pay more attention to future lists. Draft lists reflecting the proposed optimum order are put together by the scheduling team and then reviewed





Improvement work led to seven trays of surgical instruments in theatre for knee replacements (above) being reduced to four (right), and work is under way to create a single instrument pack for a given procedure



by the relevant surgeons and anaesthetists a week, or even several weeks, in advance. This leads to patients being allocated in advance more definite timings for their time in surgery, which can have major implications for the fasting regimes that patients have to follow.

‘Previously, people might have been asked to fast from the evening before an operation but not operated on until the following afternoon,’ says Helen Gilbert, Leeds Teaching Hospitals’ kaizen promotion officer, who is leading the improvement work.

‘Now a patient may be able to have a light meal the evening before or a drink of water in the morning if they are guaranteed to be the last on the list.’

This not only impacts on patient experience but can help recovery time, if patients avoid unnecessary dehydration.

The team is now looking to progress further improvements. For example its aspiration is to undertake patient pre-assessments on the same day as the outpatient appointment at which the decision to operate is taken.

To take this forward, the trust needs to find a fixed location to do the pre-assessment, but a half-way house has seen patients leave their hospital outpatient appointment with both a date for surgery and for their pre-assessment.

There may have been financial benefits from

the work – avoiding spaces in theatre lists due to cancellations – and reassigning staff onto more value added work. Certainly the volume of activity has increased.

But Ms Gilbert stresses that this is not the goal. ‘Our philosophy is that cost improvement is a consequence, not the point of our work,’ she says. ‘It is about spending the money we have more wisely.’

This ‘quality first’ approach is underpinned by deliberately keeping the improvement work separate from the trust’s cost improvement programme. ‘We haven’t had a CIP target imposed on us,’ she says – an approach that appears to have been adopted across other trusts in the programme (see box page 24).

If cost savings are identified and delivered, they may contribute towards a unit’s cost improvement target – but that is not the over-riding goal.

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Helen Gilbert, Leeds Teaching Hospitals

Inventory focus

A second RPIW in March looked at theatre inventory for total hip and knee replacements, including the implants, theatre trays and loan kit. In particular it aimed to examine

the potential for rationalisation of the various instruments used and to reduce the time taken to get these instruments ready to use for each operation.

The RPIW was instrumental in helping different parts of the theatres’ team to understand each other’s roles and to challenge parts of the process. For example, there was little awareness among the surgeons that picking the surgical instrument trays (seven in total) along with additional individual instruments to meet the needs of the surgical team took nearly 20 minutes. Preparing those trays and instruments for use – opening packs, counting the instruments in and quality checking – took a further 29 minutes.

Yet orthopaedic surgeon Campbell Maceachern admitted that ‘some of these instruments I have never seen before and wouldn’t know what they were used for.’

Theatre staff reviewed the instrument requirements of all the surgical team and specified new trays – reducing the number needed from seven to just four. And then the stock room was redesigned, creating dedicated aisles for different procedures along with a ‘basics’ section.

These combined actions slashed the tray



Leeds improvement teams at a recent ‘report out’ with Julian Hartley (centre) and Helen Gilbert (right)

Find out more

NHS managers can hear more about the Virginia Mason story at an HFMA value masterclass on 17 June. The masterclass will focus on outcomes for patients and populations and be addressed by Suzanne Anderson, executive vice-president, Virginia Mason Health System, and president, Virginia Mason Medical Center. It is open to finance director and chief finance officer members of the HFMA Costing for Value Institute, with members also eligible to bring a clinical colleague with them. For more details visit www.hfma.org.uk/education-events/

picking time by 19 minutes – with just 55 seconds now needed to select the right trays. Preparation time has also been cut by more than 20 minutes.

More ambitious plans to create a single instrument pack for a given procedure are under development – the necessary instruments are not all available currently from the same supplier.

With theatres being one of hospitals' most expensive resources, reducing turnaround time between patients is a valuable prize – which ultimately could enable more patients to be treated within the same session.

There are quicker paybacks too. There could be a saving in the instrumentation the trust needs to stock, but certainly in its sterilisation costs, which have already been reduced.

Once the process is locked down – the focus to date has been on the use of one particular knee joint – then it can be applied more widely across orthopaedics, and then lessons learned across other surgical departments.

Challenging agenda

There are challenges. While the improvement work (at Leeds and elsewhere) may not operate under its own cost improvement targets, it is not immune from the current financial challenges.

Staff at the Leeds report outs talked of the time pressures. One spoke of their frustration about not being able to advance the improvement work faster because of the pressures of 'the day job'.

The current financial climate does not allow for backfilling of staff tasked with the improvement work. And while the eventual plan is for the Leeds Improvement Method to become business as usual, for now there remains a steep and time-consuming learning curve for all staff.

IT is also a common obstacle – or lack of relevant data to inform optimum decision-making. Some changes will inevitably need

Discipline is the key

'We didn't want to apply for the Virginia Mason initiative because we thought we should,' says Andy Hardy, chief executive of University Hospitals Coventry and Warwickshire NHS Trust – one of the five trusts selected to demonstrate how the continuous improvement methodology can be applied in the NHS. 'We'd already launched a five-year organisational development strategy in 2014 called *Together towards world class*.

'There are two streams – covering patient experience and services – which fit perfectly with the Virginia Mason aims. And we reasoned this could help us get there quicker.

'We want to be the best we can be and this gives us a set of tools to do that,' he says, identifying standardisation of processes as crucial to the elimination of waste and potential harm.

'Discipline is the really key word – doing things as you planned, as you said you'd do them and in a defined way.'

Initial work has focused on ophthalmology, with two rapid process improvement workshops looking at the

booking of outpatient appointments and at how clinics are run.

The first has resulted in a 'massive change', with the 'complete removal of partial bookings' – patients now leave clinics with follow-up appointments booked in. 'This is great for patient experience, eliminating the potential for people to be lost in the system, and led to efficiency on staff side.'

The subsequent RPIW looked at how clinics are run and has

kept the Virginia Mason work separate from cost improvement programmes.

'Virginia Mason chief executive Gary Kaplan talks about how the path to low-cost healthcare is the same path to high-quality healthcare,' says Mr Hardy. 'And we have deliberately not attributed any cost savings to this programme, although we know it will drive efficiencies.'

But if the improvement work identifies savings that can be realised, service units can use these against their cost improvement targets. 'It is that way around,' Mr Hardy says.

The trust has three value streams – ophthalmology, incident reporting and theatres – and expects to undertake six or seven RPIWs this calendar year, spreading

learning across the trust where it can. Other areas are keen to get involved, with services such as maternity pitching to be the next value stream.

Mr Hardy says: 'A clear message from Virginia Mason is that it is very disciplined. You can't do everything at the same time; you do things steadily and let it build. At the end of five years, not every part of the hospital will have been directly involved, but every part of the hospital will have been affected.'



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Andy Hardy

led to standardisation on how they are set up and the numbers of patients seen, as well as requiring all patients to be booked in.

Mr Hardy acknowledges that some clinicians – those not directly involved in the RPIW – have kicked back against some changes. 'We were told to expect that,' he says. 'You just need to work through it – we are doing this because it is best for patients.'

As with Leeds, UHCW's approach is to

capital or revenue investment, which can be difficult in a climate of significant cost improvement requirements.

And inevitably some staff will be opposed to the changes that will emerge from the process, even if these might be short-lived.

Both Ms Gilbert and Mr Hartley accept these challenges, but say that moving to a

rigorous system of continuous improvement is simply the right thing to do. And the Leeds Improvement Method is not about quick fixes, it is about introducing sustainable improvements. These improvements may take years to materialise in some areas or in terms of some national indicators, but it makes sense to start the journey as soon as possible. ○

