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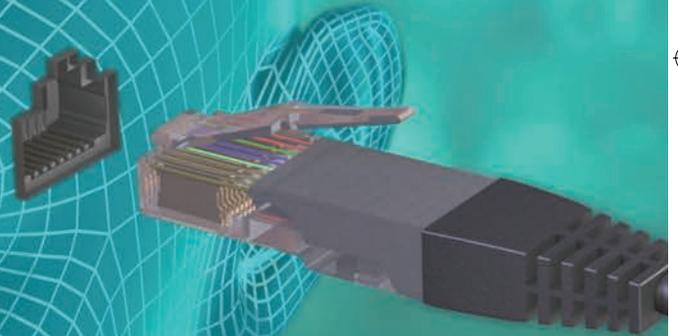
**HSJ**

# INNOVATION THROUGH TECHNOLOGY

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# CONTENTS



Supplement editor  
Daloni Carlisle

## WORKFORCE



Paper based management of NHS agency staff has historically been bureaucratic and prone to errors – with trust executives often ignorant of which agencies they use, or even how much they are paying staff. New systems can help trusts to ensure that they get the lowest prices, use the best agencies and gain valuable data on staffing gaps to shape future recruitment. [Page 8](#)

## TELEHEALTH

Remote monitoring of patients taking the blood thinning drug warfarin avoids the time, expense and disruption of having to continually attend clinics for tests – and points to a way forward for telehealth for other conditions. [Page 2](#)



## SELF CARE

Giving patients control of their health is a key goal for the NHS. A new web based tool that allows patients to set their own goals and, with GPs' support, to monitor and make decisions about their own health offers a glimpse of the future. [Page 6](#)



## INFRASTRUCTURE



Clinicians trying to access patient data on PCs are often frustrated at the painfully slow process of logging in and out of applications dozens of times a day. One solution is a virtual desktop, where all the data is held on a single central server, rapidly accessible wirelessly or remotely from anywhere. [Page 12](#)



“ In an age where technology has made communication of complex data effortless, shouldn't the NHS be investing more in telehealth as a means of saving money while improving outcomes? The government certainly thinks so: “We've done a trial,” said David Cameron, “it's been a huge success and now we're on a drive to roll this out nationwide.” But so far, this has not happened.

This article, right, reports on a new model for telehealth involving a group of patients who, thus far, have not been offered a service. They are the hundreds of thousands of people on long term warfarin who require regular clinic blood tests. This hospital based regime has a negative impact on patients who want to live a “normal” life. Freeing them from the need to travel to hospital has the potential to put them back in the driving seat of their own lives while delivering a more efficient service.

This is why Roche Diagnostics has entered a partnership with County Durham and Darlington Foundation Trust and InHealthcare to develop a simple, safe solution.

Using CoaguChek XS, a simple handheld INR device, and nothing more than a telephone, this solution has taken away the need for patients to travel to anticoagulation clinics. The automated system collects patients' INR levels, which are instantly sent to the healthcare professional, and the appropriate warfarin dosing is looped back to the patient.

It is swift, simple and efficient. Importantly, clinicians have been involved in designing the system and processes and ensuring that it is safe.

Early feedback already shows increased user

## ‘INR clinics are currently bursting at the seams’

satisfaction. Fewer trips to clinic mean less travel expenses and, more importantly, less disruption to daily life. Fewer patients unnecessarily attending clinics should create capacity for those with more complex cases who require face to face care. And, at scale, this will help address the problem of INR clinics that are currently bursting at the seams.

In the coming months, the project evaluation will be looking for improved INR control, meaning patients have a reduced chance of stroke or haemorrhage.

All in all, the outcomes point to a dynamic service, with the potential to improve outcomes and to save time and money for patients, healthcare professionals and the NHS.

Yes, it is another pilot project and no, it will not suit every patient. However, it potentially offers an alternative, scalable model for telehealth that others may wish to explore.  
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## TELEHEALTH

# THROUGH THICK AND THIN

Patients and staff involved in remote monitoring of those taking blood thinning drugs talk about its impact on lives and, crucially, its safety and reliability. By Daloni Carlisle

Countless people owe their life to the anti-coagulant warfarin. But for the hundreds of thousands of patients who take the drug, attending the regular hospital appointments that go with it is the bane of their life.

So County Durham and Darlington Foundation Trust is now testing a telehealth solution. It's a novel approach that could redefine both how patients on warfarin can take more control of their condition and how we think about telehealth.

Jeannie Hardy, who manages the programme for the trust, explains why traditional hospital based services are burdensome for patients.

“There are a lot of people who need to take warfarin,” she explains. “Some of them have had a stroke, or an embolism or thrombosis. It is also prescribed as a preventive measure for some people with heart or blood conditions or who have atrial fibrillation and are at risk of stroke.”

They need just the right amount of warfarin to thin their blood enough to be

therapeutic but not so much that they are at risk of bleeding complications. All sorts of factors from diet to changes in other medications such as steroids can affect the therapeutic dose and the only way to get it right is through regular monitoring. And the better the control, the better the outcomes for patients.

Usually patients need to make weekly or monthly visits to a hospital outpatient clinic, although increasingly clinics are being provided in the community. There, they give a venous blood sample or have their finger pricked for an INR (international normalised ratio – a measure of blood coagulation time) test and their dose of warfarin either confirmed or changed.

And that, says Ms Hardy, can be time consuming, expensive and disruptive, particularly for working people. For retired people who may want to travel the world it is very restrictive. “We cover a large geographical area including some very rural parts,” she says. “We have people travelling





Drain on resources: INR tests in clinics cost trusts and patients time and money

20 miles each way to get to the hospital for what might be a five minute appointment. Some of them have to take two buses each way and that's expensive. For those who drive there are car parking charges.

"We have one man who lives in Durham but works in Aberdeen and he travels 300 miles to get to the clinic."

But while clinical expertise is vital in this monitoring – it needs a trained clinician to assess the INR, adjust the warfarin dose and advise patients on lifestyle – the testing itself is actually quite a straightforward task. It requires a finger prick to produce a ladybird-size spot of blood, which then goes onto a testing stick that is inserted into a machine that automatically gives a result.

The technology for home testing already exists. It involves training patients to use a home INR monitor very similar to the one used in many hospitals and community clinics. It has been proven safe in numerous clinical trials. These have shown that patients who self monitor manage their condition better – they are less likely to develop a thromboembolism, less likely to suffer a major haemorrhage and less likely to die. They are also score higher on patient

## THE CLINIC SISTER'S STORY

Tracy Murphy, anticoagulation clinic sister at County Durham and Darlington Foundation Trust, admits she was apprehensive when the idea of telehealth INR monitoring was first mooted.

"Everybody's main concern was patient safety," she says. "Could patients do their own testing? Would the new interface work? But so many safety measures have been built in and I am really happy with it."

The training for patients is rigorous, she says, and they are never allowed to feel abandoned by the clinic. Safeguards are in place to ensure follow-up and good communication.

If patients do not pick up the phone on the first call, then the system tries them again after 30 minutes. A second failure generates an automatic alert.

"We get a red alert and it's really just like a DNA at the clinic," says Ms Murphy. "We get on the phone and chase them up."

Patients with any bleeding symptoms or medication changes are asked to call the clinic – the system will not let them input their INR reading. They hear the clinic number during each call and are always welcome to call the clinic anyway if there is anything they need advice on.

Working with the new system has been quite a change for the clinic nurses, whose job it is to review the patients' results as they ping into the portal and then to feed back changes, although it is one of many changes: the nurses have tried other new ways of running INR testing including community-based clinics.

They have fitted the telehealth task in around manning the clinic's helpline. "I'm not worried about things slipping through the net as we have good communication here," says Ms Murphy.

The software was developed with input from the nurses, which Ms Murphy says has been extremely helpful, and they are contributing to software updates to improve it further.

"I do think it is better for the patients," says Ms Murphy. "I think it builds confidence between patients and nurses. We are managing 100 patients in a more efficient way and the carbon footprint must be better."



satisfaction scores and worry less.

But self monitoring has seen low uptake in primary care and, at any rate, only takes a service so far – patients at home using their own monitor still need to link to a health professional. This is where telehealth comes in. “It completes the loop,” says Ms Hardy.

In August last year, the trust developed a pilot project to test how this might work in a three-way partnership with Roche, which provides home testing technology and software company InHealthcare.

It works like this. The patient self tests at home on an agreed date and then waits for an automated call at a time they have chosen. The automated system asks them some security questions, to confirm their identity, some questions about their clinical symptoms such as bleeding and other medications, and asks them to key in their INR and current warfarin dose.

These results are automatically fed to a web portal at the hospital for review by a clinician – in this case the anticoagulation nurses at the outpatient clinic. The nurses use anticoagulation software and their clinical judgement to adjust the dose as

necessary and set the date of the next INR test and then enter this data into a web portal.

The next stage is to feed the data back to the patient and again this is done by an automated phone call to the patient at a time that they specify. They take the call, confirm their ID and confirm that they have understood the information given.

There are multiple safety features built in (see the clinic sister’s story, previous page) but in essence that’s it. No need for broadband or a big box in the patients home – just a telephone line or a mobile number. No need for a dedicated call centre, just a change in workflow for the clinic nurses.

Of course, setting it up is not simple and it took the trust six months to establish the pilot, design the operating procedures and clinical governance and start recruiting patients.

Attracting patients to the trial has been easy and it took just a few weeks to recruit the target of 100 people. “We have recruited two main groups,” says Ms Hardy. “People who are working and had to take time off work to come to clinic and retired people who travel a lot.” They are mostly long term warfarin users who are stable and who already know and trust the clinic nurses.

Once patients agree to take part, they are trained at the hospital by two nurse trainers, one provided by Roche and one from the trust. They attend two training sessions – one to learn the technique and one to confirm that they have it correct. Between sessions they get a CoaguChek monitor, testing strips (paid for by the trust), an instruction DVD and the chance to practise.

“We don’t let anyone self monitor until they have been signed off as competent,” says Ms Hardy. “Most people do manage it but there is a technique to it.”

Once on the pilot scheme, the patients take control. “The clinic sets the testing date but patients agree the time they get the first and second calls from the system,” explains Ms Hardy. “For some people the first call is at 5.30am and the second at 10pm.” They can decide if they want the call to go to their mobile if they are away from home.

The system is designed around safety and will trigger alerts if, for example, the patient’s GP has changed other medications or they have had a bleed. In such cases, instead of being asked to submit their reading, they are asked to call the clinic.

Ms Hardy is at pains to stress that it is early days and there is a formal evaluation still to be completed when the six-month long trial ends.

“This trial is about testing whether this works, is it safe, are patients satisfied and do they have better outcomes. In the future we are going to need to work out how it will be costed, who will pay for it and whether commissioners will want to commission it.”



### THE PATIENT’S STORY

**Kay Dover, a health studies lecturer at New College, Durham, with two young children, was 46 when in 2009 she developed lupus disease, an autoimmune condition. One of the complications was a deep vein thrombosis in her left leg. “That means I am on warfarin for life,” she says. “Of all the medications – the steroids, the immunosuppressants – this was the one I hated taking most.”**

**She hated the constant visits to the hospital, and the disruption to her employer and her students; she hated the fact that when she went to the US on holiday it cost her £100 to have a private INR test.**

**“I’d explored self testing with my GP – he advised me I could do it but would have to pay for the strips myself,” she says.**

**So when the telehealth trial came up, she jumped at it. “The training was very simple and very patient-centred,” she says.**

**“There were initially a few hiccups [Kay was one of the first to trial system] with the telephone cutting off mid call but I always got a call back from the clinic [the] same day when that happened. It gave me confidence that the healthcare professionals were on top of it. From there it has just got better and better.**

**“It means I do not have to take time off work any more and I feel more in control. It is very user friendly – you don’t have to be Einstein to use it – and it has given me a new lease of life.**

**“The thing I cannot emphasise enough is that, as a patient, you are not on your own. You have back up from the professionals. I don’t bother them, but I know they are there.”**

So far, the feedback is positive. “From a patient perspective, we have had a lot of positive feedback,” says Ms Hardy (see also the patient’s story, left). “We have had only a small number who dropped out after the first training session, once they understand how it works, and who decide that it is not for them.” Meanwhile, people are queuing up to join, she adds.

There are people for whom this system might not work, however. “People who are hard of hearing might struggle as well as people who have problems with dexterity and keying numbers into a telephone,” says Ms Hardy.

For Jane Haywood, clinical director of adult and integrated services at the trust, this is as much a trial of new ways of using telehealth as it is of home INR testing.

Yes, she says, she wants to see a service for patients that provides a better patient experience and higher levels of satisfaction and in which, by taking control of their own



## THE SOFTWARE DEVELOPER'S STORY

The company that developed the INR telehealth monitoring software, InHealthcare, is part of the InTechnology Group that is better known for providing network connections for the NHS.

It has been set up to develop telehealth solutions, not based on putting a piece of kit in people's homes but on developing solutions to people's real problems.

"We identified anticoagulation therapy as a real opportunity," says product manager Richard Quine. "It is a simple test but very disruptive. When Roche approached us about this, we said yes."

The technology itself is not new – but its application is. It uses automated calling to link the patient with the clinic; at the clinic end the nurses use clinical software provided by 4S Dawn to review results and alter doses. The phone service is secure as are the data transmitted and stored, in line with both NHS and trust policies.

At the moment, all the patient needs is the CoaguChek monitor, testing strips and a phone. InHealthcare is now developing an app for use on a smartphone.

Mr Quine is also working with the trust on other applications. "We have spent the last six to nine months working with various clinical teams. People say nurses are resistant to telehealth but that's not my experience. As soon as you ask how can we make your life better, they are on board."

Fruitful areas may be nutrition support, for example telehealth coaching to help people preparing for bariatric surgery or to identify people in care homes at risk of malnutrition or home monitoring of pregnant women with pre-eclampsia.

"The trust has embraced digital health in a big way," says Mr Quine. "There are lots of ideas that we believe could be useful not just in County Durham but in the whole of the NHS."

condition, they adhere better to the medication regime and get better outcomes. One key performance indicator is to increase patient's "time in therapeutic range".

And yes, she adds, without a doubt it will prove more efficient in the long run than existing models of care.

But ultimately, Ms Haywood says: "We need to be able to deliver telehealth services at scale and at pace and you cannot do it by putting hubs into the homes of people with COPD. It does not work. You have to do it by thinking outside the box."

So the work will not stop with INR monitoring. The trust is now exploring telehealth nutrition support with the software company InHealthcare (see the software developer's story, left).

This trial, although at early stages, could well be one to watch for the future. The only losers, it seems, will be the bus companies and the companies that collect the car parking charges. ●

## RICHARD POPE ON DISRUPTIVE INNOVATION



“The NHS is broken – discuss.” Not the exam question our children have been answering over recent weeks, but certainly one we could legitimately ask ourselves.

Focusing on this would, however, miss the point; many say the service is working much as it was designed to, but unfortunately the world and its healthcare needs have moved on at pace. The NHS is not broken but it is in many ways no longer fit for purpose. It has tried to trim, lean and measure its way forwards with limited success.

There are fundamental problems in trying to adapt a system that was designed to deliver acute care to deliver effective support to the rapidly increasing number (and ages) of people with multiple long term conditions.

To achieve this we need transformation. We need to allow our talented workforce to think, work and manage in a completely different way. This requires not incremental transformation but “disruptive innovation”, made famous by Clayton Christensen.

This takes technology that is either new, or exists today – in its own sector tried, tested and trusted – and through inspired application in new ways or in a new sector, dramatically refocuses effort to deliver something that is truly a game changer.

### ‘Entrenched practices will change profoundly and at speed’

For the 40 per cent of the population that has at least one long term condition – and consumes 70 per cent of the NHS budget – the technologies required will in large part be those of information sharing, persuasive technology and business intelligence. Couple these with the power of the mobile phone and its ever faster networks and Christensen himself would be warning established provider organisations to look out.

The consequences of success? Our most deeply entrenched practices will change, profoundly and at speed. What we understand by terms such as self care, referral, clinical opinion, pathway, outpatients and even acute admission will become different things.

In their new form, they will more effectively engage and activate not just our patients, but also our staff, who will regain the headroom they so desperately need and embrace change rather than fear and block it.

We should remember the saying “eyes shine in the presence of opportunity”. Through the combination of technology and inspired thinking, some of which is described in this supplement, opportunity may very well be starting to knock.

Richard Pope is clinical director at Dynamic Health Systems Ltd  
[www.dynamichealthsystems.co.uk](http://www.dynamichealthsystems.co.uk)



## IN ASSOCIATION WITH TPP AND DYNAMIC HEALTHCARE SYSTEMS



### SELF CARE

# SUIT YOURSELF

## Jennifer Trueland talks to a GP who is leading the way in giving patients the tools to set their own health goals and monitor themselves

Dr Shahid Ali is on a mission: he wants to change the current medical model of care to one where the patient is in control.

That might sound ambitious, but while others might talk the talk on patient-centredness, he is actually doing something about it; what is more, his efforts are showing extremely good results, with benefits for GP practices, the health service, and, of course, the patient.

The Bradford GP is one of two clinicians behind VitruCare, an internet delivered self care service that allows patients to set their own goals and, with support of their GP, to monitor their own health and make decisions based on data from their electronic health record.

The product has been developed by a start-up company, Dynamic Health Systems Ltd, which is partnering with TPP to link up VitruCare with SystemOne, the clinical system, best known for its work in primary and community care but now with a reach into acute care too.

VitruCare builds on an approach that Dr Ali introduced in his own 4,000 patient GP practice around five years ago.

“I am passionate about changing the dynamic between the patient and the doctor,” he says. “I want the patient to be much more active in looking after themselves, as opposed to being a passive participant – I wanted to introduce immediacy to the system.”

Dr Ali, who has also worked as a deputy medical director with his local PCT, and who was seconded as a clinical leader to Yorkshire and Humber SHA, was particularly interested in long term conditions and how they were treated.

He saw that his patients often had two or three long term conditions, and were traipsing back and forth to different clinics – for diabetes, say, and chronic obstructive pulmonary disease – where the same

measurements and lifestyle chats were taking place.

“I wanted to take a much more holistic approach and the idea was really simple,” he says. Essentially, his practice scrapped condition specific clinics – and they were running quite a few – and replaced them with just two. Patients with one or two long term conditions would be invited to the “blue” clinic, with half-hour consultations, while others would attend the “red” clinic, with consultations lasting up to an hour.

“We would open the consultation by asking the patient what was important to them at that point – so we weren’t starting out with us telling them what was wrong with them.”

Patients were encouraged to set their own goals in discussion with the clinician and sent home with a print out containing their measurements (such as blood pressure), health status, and other relevant information.

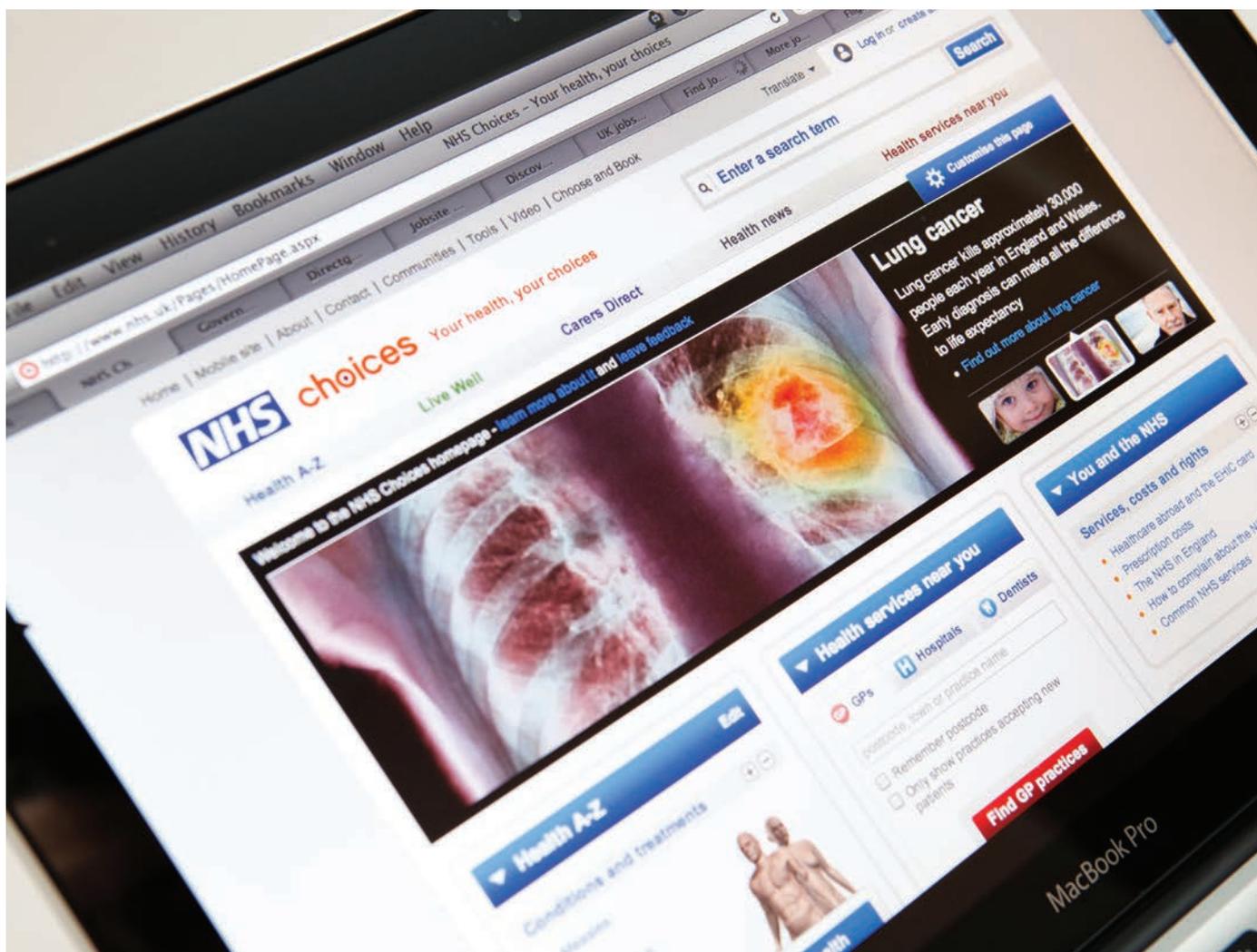
Patients loved it, he says, and the impact was astounding.

“After about a year, the SHA did a data trawl and found that in 80 per cent of cases patients were achieving their goals,” he says. “The medical model of us telling people what to do doesn’t work; what does work is people setting their own goals.”

Results also showed that the patients consulted less, that A&E attendance reduced, and that service utilisation costs were down.

The next thought, says Dr Ali, was “how do we scale this up?” And that was probably the starting point of VitruCare. He and consultant diabetologist Dr Richard Pope got together with designers to create an internet-based service which took the template even further, potentially making it available to patients across the country.

“We wanted to create a supported self-care system that allowed the patient to be in control,” he says. “VitruCare developed on



the basis of the same motivational psychology [as the paper system used in his practice]. It has a very user-centric design – in fact, patients have been involved in the design at every stage.”

The service has a patient workspace, allowing people to access their medical record, contact their practice, email their clinician and which acts as their platform for telehealth.

Key elements of the product – which can be used on smartphones, tablets and computers – include “bubbles” which show health status, such as weight, blood pressure, or medicines management. The bubble will be larger if there is a problem, and smaller if that area is under control. This means patients can see at a glance how they are doing and where action is needed.

Again, patients set their own goals, essentially creating their own care plans, which are “sense checked” by the clinician to make sure they are safe and reasonable. “For example, if you have heart failure, and your goal is to run for three miles per day, that isn’t safe,” Dr Ali says.

There are also links to trusted websites, such as NHS Choices, and to a forum where

## ‘The medical model of us telling people what to do doesn’t work; what does work is people setting their own goals’

patients can share their experiences in real-time with other patients.

The system also has a healthcare professional workspace that can be accessed from inside SystemOne and is therefore directly connected with the patient record. For the clinician, VitruCare allows direct and timely access to patients, enables personalisation and builds commissioning intelligence. The clinician can also call up a “dashboard” to monitor patients with long term conditions across the practice list.

“For the patient, the bubbles show real, achievable things,” says Dr Ali. “There’s a self care work book, which the patient fills in, and social media, as well as the opportunity to contact the clinician direct. Some people have asked if that increases my

workload, but I have to say it doesn’t, because otherwise the patient would make an appointment to ask something which can be answered quickly and simply by email.”

Dr Ali is aware that VitruCare potentially excludes patients without internet access. “We’re in active discussions to make it available through televisions,” he says. “We want to address health inequalities, and most people have a television, so I believe that will be a good way forward.”

At the moment the system is being used in early adopter practices, but Dr Ali hopes that it will soon be deployed in several clinical commissioning group areas.

It’s good for GP practices, he says, because it helps boost Quality and Outcomes Framework performance in a number of areas, including the enhanced service around enabling patients to utilise electronic communications.

Other future plans would allow patients to video conference with their clinician from the comfort of their own home – something that Dr Ali says his patients are already asking for.

“Of course not all patients engage, but most do – and they really like it,” he says. ●

**STEPHEN BURKE  
ON INTELLIGENT  
MANAGEMENT**



**IN ASSOCIATION WITH HCL CLARITY**

**HCL**Clarity  
Workforce Solutions

“ With 1.3 million employees, payroll accounts for almost two thirds of the annual NHS budget and yet this most valuable, movable and transferable asset is probably the least consistently planned of all large-scale budget lines.

At HCL Workforce Solutions, we believe trust workforce is a core operations function and its planning should be as strategic and as tightly managed as theatre supplies.

Access to comprehensive, real-time, easy-to-interpret management information is the only way planners and procurers can get an accurate picture of this intangible asset. As the largest commercial supplier of temporary healthcare professionals to the NHS, we have found this idea is popular in theory but have seen little evidence of it in practice.

To address an unmet need, we have invested in an innovative workforce management tool bespoke to the unique demands of the NHS. HCL Clarity provides a trust with complete transparency across its contingent workforce, and is an end to end technology platform dedicated to planning and managing workforce from procurement through to pay.

We know true collaborative working with NHS customers is the only successful way forward, and so have ensured our technology is matched by real-time, on-the-ground support to enable the embedding of new working practices.

By providing trusts with this combination of management information and support, we enable greater efficiency through working practices and processes already embraced by the commercial sector. Indeed, the Skillstream

**‘Workforce should be as tightly managed as theatre supplies’**

technology platform has proven its mettle, supporting the recruitment and management of the 2012 Olympic workforce.

We are enabling efficiencies and promoting patient safety through a compliant workforce in the acute sector using government procurement frameworks. However, HCL Clarity has also a critical role to play in the less regulated primary care sector. If frameworks designed for the provision of temporary staff were promoted across the NHS, commissioners would be able to benefit from intelligent management of their contingent workforce.

By way of illustration, it is estimated that approximately £360m was spent on temporary staffing in the primary care sector in 2010, with very little coming through government framework agreements. As more services are pushed out to community settings, who will manage risk and budgets through workforce compliance and safe staffing levels?

Stephen Burke is chief executive of HCL  
[www.hclclarity.com](http://www.hclclarity.com)

**WORKFORCE**

# SHIFTING TO A HIGHER GEAR

## How can trusts accelerate efforts to cut spending on agency staff? Daloni Carlisle reports

Long before the Olympic organisers LOCOG began to recruit 70,000 volunteers and over 110,000 staff for the 2012 games, they realised they needed a technology platform to manage the process.

They needed transparent, streamlined, automated processes for advertising jobs, screening CVs, checking candidates had the right qualifications and CRB checks, offering them a job, bringing them on board once they had been appointed, rapidly identifying where there were unfilled vacancies, handling invoices and keeping control of the costs.

The platform they chose was Skillstream, already widely used in banking and telecoms to manage agency worker appointment. That same platform is now being used in the NHS both in its own name and more recently as HCL Clarity, a collaboration with HCL Workforce Solutions.

Darren Bush, project manager with Skillstream, says the platform worked extremely well for LOCOG. “It was very successful,” he says. “One mark of that is that there were no complaints.” The site had to be up 24 hours a day for over three years from May 2009 to July 2012 and recruits came from 193 countries.

While there may seem a world of difference between LOCOG’s requirements and those of the NHS, the differences are not in fact so vast, he suggests. Invoicing, cost control, compliance checks, induction, signing off timesheets – all of these are shared.

But where LOCOG started with a clean sheet, the NHS often starts with entrenched, paper-based working practices that can be hard to budge. This is particularly true of medicine.

“I have been into hospitals and done audits,” says Mr Bush. “What you tend to find is a group of locum secretaries, maybe up to 20 of them, all in different wards, all

using their own preferred agencies. They use email to send out vacancies to the agencies, who email back with CVs of doctors which then get printed out for the consultant to see.

“The consultant approves the appointment, the candidate gets a paper timesheet that gets signed off by whoever is in charge and sends that off to the agency who then sends in an invoice.”

In one trust, agencies sent an invoice for each day worked and the finance department was dealing with 1,000 to 1,500 paper invoices a month just for locum doctors. “We estimate the handling errors on invoices at 3 to 4 per cent,” notes Mr Bush.

As if this were not bad enough, the managerial oversight of such practices is non-existent.

“When I have done diagnostic reviews with NHS hospitals I find there is no visibility,” says Mr Bush. “They cannot give me information about which agencies they use and whether they are on frameworks, what their spend is, what hourly rates they are paying doctors, or what they are committed to paying in the forthcoming month as invoices arrive.”

Gina Houghton, project director for HCL Clarity, says it is vital trusts gain transparency. “They need a handle on how and why they are employing temporary workers if only to make sure it is only happening where needed.”

Web based platforms can enable trusts to decide in advance which agencies they are going to use first and enforce rules about using framework agencies. Mobile apps allow consultants to sign off timesheets on the move.

Managers can see in real time how many shifts are being filled by temporary workers and spot anomalies that might be better solved with a substantive appointment, for example. In Worcestershire Acute Hospitals,



where HCL Clarity is now live, the managerial oversight has led to numerous spin-off benefits including setting up a bank for doctors (see case study, overleaf).

Automatic invoicing cuts down dramatically on the time needed not just to process payments but also on the scope for error and fraud. Software can specify who is authorised to sign off timesheets and deliver them electronically.

“The software is really straightforward and it is modular, with bank, agency and e-rostering modules, so trusts can implement as much or as little as they choose,” says Ms Houghton. “It gives a trust transparency and control of the temporary workforce.”

But as anyone who has implemented an IT system in the NHS will know, the technology is but a small piece of the jigsaw. The much larger piece is the change management.

Hence the collaboration between Skillstream and HCL Workforce Solutions. One partner brings the technical expertise;

## ‘They cannot tell me what their spend is, what rates they are paying or what they are committed to paying next month’

the other the specialist NHS change process skills.

Michael Baldwin, project manager with HCL Clarity, describes the approach. “The temporary workforce is a high spend but it does not fit easily within one department,” he says. It is not the core business of HR or of finance and often operates in what amount to fiefdoms of departmental locum coordinators.

Change, he says, needs to be finance driven with high level sponsorship either from finance or HR and bringing in stakeholders including locum coordinators and bank coordinators.

Communication is key and Mr Baldwin suggests a communication matrix to bring people on board. “You need to understand the audience,” he says. “About 80 per cent will be people who have accepted the need for change and 20 per cent will be resistant, either because it changes their job or they feel threatened. You need to point out that it is not just their working practices but the whole trust that is changing because of the need to make savings.”

The next step is to document all the existing work processes and re-engineer them to the new process. “This will show where you can save time and money,” says Mr Bush. Finally, there is training. Often this needs to be revisited to ensure that everyone is using the system as intended and to support managers as they gain control of the reporting.

No one pretends this is easy. In Worcestershire, it was three months solid work preparing the ground before the system went live. But with visibility, now managers can start to get creative. ●

**WORKFORCE: CASE STUDIES**

# WE CAN SEE CLEARLY NOW

How a system that makes it transparent where the gaps in the workforce are has helped one Midlands trust to focus its longer term recruitment efforts

**WORCESTERSHIRE HOSPITALS**

Like many trusts, Worcestershire Acute Hospitals is struggling to recruit middle grade doctors, particularly in A&E, paediatrics, obstetrics and gynaecology. Again, like many hospitals, it was facing growing bills from agencies for supplying locums to these posts – some £7m last year.

Now with the help of a new IT led system from HCL Managed Services called HCL Clarity, the trust has complete visibility of its spend and at last can drive down costs.

Beverley Edgar, the trust's interim director of HR, explains why gaining this transparency was a key starting point for tackling not just the spend but also for pinpointing where to target longer term solutions. "The national situation is fairly critical for these middle grade doctors," she

explains. "We were seeing rising costs of using agencies but really did not have an overview of what was being spent where."

Before the implementation of HCL Clarity at the trust in February 2013, locum coordinators working at directorate level booked agency doctors using paperbased systems, telephone and email.

The first trust overview of the situation was when the invoices arrived. There was no full overview of which agencies were used, how many of them were on government procurement frameworks – which are meant to drive down costs by offering competitive rates – or about whether the trust was getting the best possible rates.

It was also not clear who was signing timesheets and the trust frequently faced double invoices so spent a lot of time spotting and resolving these issues.

"All we had was a retrospective view of the spend," says Ms Edgar. "We were always looking at the invoices but had no whole system overview. I cannot imagine any business accepting this lack of transparency for a discretionary payroll spend of £7m."

This situation was nobody's fault, she explains. Locum coordinators were not able to compare rates and were, rightly, focused on getting properly trained, compliant doctors in to fill gaps in the rota, often at short notice.

The trust needed an end to end process that would manage this activity and provide the transparency and visibility that senior managers needed.

Ms Edgar says: "We wanted some clarity around the provision that would enable us to see when requests were made, which agencies they went to, what rates they were charging and what fees they might impose."

The trust wanted to be able to go to framework agencies first and to automate invoicing. "We wanted a transparent picture of each and every shift," says Ms Edgar. "The



truth is that, if trusts want to get transparency about how they make agency choices, then they have to have an IT system with real-time data."

Transformational change is about IT solutions combined with changing processes.

**'If trusts want to get transparency about how they make agency choices they need an IT system with real time data'**

"Unless you change the systems and processes, nothing changes," says Ms Edgar.

This is where HCL Clarity came in. In November 2012, the two organisations set up a pilot project that would allow the trust to explore how to use IT systems in booking locums and HCL to understand how the system can be best configured around work processes.

Adrian Newman, project manager at HCL Clarity, explains. "The technology platform we use is Skillstream. It is tried and tested –





**Big shift: Alexandra Hospital, Redditch, part of the Worcestershire trust that is transforming how it manages locums**

### **IT SYSTEMS TO MANAGE LOCUM DOCTORS CAN DELIVER EFFICIENCIES THROUGH:**

- Automating occupational health checks
- Automating discounted rates that operate in framework agreements
- Self billing
- Comparing rates and allowing the trust to choose the most competitive
- Eliminating use of risky “off framework” agencies
- Providing management with information about areas that are short of staff
- Better bank utilisation

agencies to help them understand the trust’s needs in more detail.

There are other benefits too. “For the first time we are able to see real time where the gaps are in our workforce – where the gaps are in the rota week after week. It is helping us to understand where we need to focus recruitment in a much more informed way.”

It has, for example, provided the evidence needed to prompt a look at using more emergency nurse practitioners sooner rather than later.

Another spin-off is the trust has been able to create an in-house bank of 200 junior and middle grade doctors. “These are people already in the system who have not necessarily thought about working outside their own specialty but potentially could do so, or people who worked with us as juniors and want to come back on a bank basis,” explains Ms Edgar.

HCL Clarity’s support continues even after going live. A strategic account manager, Amanda Nicholls, is in the trust a day a week providing ongoing support and helping the trust to realise the benefits of the system by analysing the data, spotting trends, and offering training and support to the locum coordinators.

“It’s important to go beyond go-live to enable the full benefits realisation of this powerful technology,” says Ms Nicholls. “Part of that is helping the trust achieve the behavioural change needed to embed a more efficient way of working, and to achieve its target reductions in agency spend without impacting patient safety.”

“We still have some work to do,” agrees Ms Edgar. “We need to stop people sending emails and getting back into the old ways of working by helping them understand the real benefits of transparency.”

For her, this implementation was about more than technology. “We have learned so much about what we needed to do around systems and processes and HCL have been absolutely brilliant not just on the technology and the IT interfacing but also in that wider piece and working with us on how we can get more out of the system,” she says. ●

both inside the NHS and outside – but we really wanted to understand how to make it most effective in this setting.”

In brief, this is a web based system that allows locum coordinators to publish shifts to agencies that also use the system. Agencies can then respond if they can fill the shift and quote their rates. They can offer a doctor only after confirming the necessary compliance checks are complete. Booking also takes place through the website.

The system gives managers a real time overview so they can see how many shifts are on offer, which agencies are filling them and at what rate. It supports self billing – which means no more invoices – and allows the trust to “tier” agencies: preferred agencies – those on framework and with a good track record – get the first opportunity to fill shifts.

The first two months of the project involved HCL Clarity working alongside HR and locum coordinators at the trust to understand workflows – who did what and when and investigating anomalies such as why there were more people signing off timesheets than there should have been. Teams then looked at how to make their processes better.

By the new year, the project moved into

automating processes. “Each department can be unique in deciding who does what and at what point,” says Mr Newman. “We take time to make sure that the system supports them and to make sure users are well trained.”

The trust also began to work with agencies, explaining to them they would be expected to use the HCL Clarity system or face losing the trust’s business.

“A number of agencies have expressed [the view] that they do not want to use our system and that’s been quite interesting,” says Ms Edgar. “They say it is difficult for them but in truth it just replaces a telephone call with logging into a web system. My response is that if you do not use our system, we will not use you. We cannot be at the mercy of agencies.”

#### **Vital information**

Three months in and Ms Edgar says the system has transformed the information available to managers as well as starting to drive costs down.

The trust is now able to get the best rates while self billing is more efficient and prevents double billing – whether fraudulent or accidental.

The trust is also sharing information with



## TISA MURDOCK ON VIRTUAL DESKTOPS



IN ASSOCIATION WITH VMWARE

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“ Providing patient care is a demanding job. Inside the hospital clinicians are always “on” and always moving. The same, unfortunately, is often not true for their computers.

Many times the clinical workstation can be a source of frustration for clinicians. Desktops that are down, locked or simply too slow to use disrupt the workflow and disrupt care.

Some nurses log eight kilometres per day as they travel throughout the ward and do not tolerate unavailable or slow workstations. Doctors need immediate access to data and applications – and there can be serious consequences if they cannot get it. Doctors also need to access their clinical desktop from locations outside the hospital so they can make treatment decisions faster.

As the entire healthcare industry moves towards electronic medical records, it becomes even more critical that desktop systems are always on and always available.

The clinical desktop should be the clinician’s best friend, the favoured tool, the dependable workhorse. A place where all clinicians’ resources are located – care applications, data, email, internet/intranet, imaging, dictation; everything required to make fast and knowledgeable decisions. None of these descriptions come to mind when we think about the traditional clinical workstation or desktop.

### ‘Now clinical workspaces can roam with the clinician’

Virtualised clinical desktops and applications transform traditional clinical workstations into the clinician’s best friend. Cloud-based clinical workspaces untether desktops from static devices and tie them to the clinician’s identity.

Now clinical workspaces can roam with the clinician, following them from device to device. The desktops are run in the data centre and can be set to always be powered on during the clinician’s shift, so logins are fast and efficient.

Imagine using your identity badge to tap a card reader and get immediate access to your cloud-based clinical desktop, with all applications and data ready to go... in seconds.

Virtualisation is a proven technology. Today’s desktop virtualisation solutions can run video conferencing, deliver 3D medical images and allow physicians to dictate notes remotely – all with a fantastic end user experience.

With a VMware AlwaysOn Point of Care solution you can provide 24/7 availability of a virtualised desktop – solving the reliability issue typically associated with desktop systems. As one of our virtual clinical desktop users said: “Finally IT is doing something for us instead of to us.”

Tisa Murdock is director of end user solutions for healthcare at VMware  
[www.vmware.com/uk](http://www.vmware.com/uk)

## INFRASTRUCTURE

# THE AGONY OF SLOW LOGINS

Long waits to access basic patient data are frustrating and inefficient. Daloni Carlisle on how to speed things up

Delivering care for patients in today’s busy hospital environment all too often requires clinicians to navigate a maze of complexity and pain points simply to gain basic access to disparate local and national clinical information systems.

However, in healthcare environments, where minutes or seconds can make a difference in patient care, it is crucial for staff to be able to quickly and reliably access medical information and applications, including NHS Spine, in the way they want – roaming from floor to floor and department to department, both within and outside the hospital, regardless of device or location.

Offering this kind of flexibility for clinicians promises both to improve working lives and improve efficiency, as Tracy Doucet, co-founder of IT solutions provider Innov8 and a former NHS trust chair, explains. More importantly, she says, it can offer significant clinical benefits and facilitate genuine transformation and performance improvement.

“Many of the clinicians we speak to are frustrated at the pain points and barriers they face – slow logins and logging in and out of applications often as many as 60 times a day, managing different desktop and clinical application environments and the restrictions created by accessing information on fixed end point PCs that are often located in the wrong places,” she says.

“All in all, it adds up to huge inefficiencies for trusts and frustration for healthcare staff, slowing clinicians down and creating barriers which prevent rather than help them do the important things, the things that really matter – managing demand and capacity upstream and providing excellent frontline clinical care for patients.”

One solution is virtualisation in which users no longer access systems and

information on their desktop but through a central server over a local wired or wireless network, broadband or 3G/4G connection. Users can log into their own systems with a single, secure sign-on to NHS Spine applications wherever they are.

Implemented well, virtual desktop infrastructure and virtualisation software not only delivers the clinical benefits but also offers a significant opportunity to increase efficiency in the IT department and deliver a significant return on investment in IT infrastructure, she adds.

That’s the theory. But the practice has often turned out to be rather different.

Ms Doucet says many trusts have tried virtualisation – but have got stuck at pilot stage. “The costs of large scale deployment have often been prohibitive due to the sheer size of the required server and storage requirements,” she says. “In cases where significant investment has been secured and larger deployments undertaken, the expected benefits have rarely been realised.”

Which is where VMware comes in. VMware, whose virtualisation products are already in use in 80 per cent of NHS trusts, has formed a strategic partnership with Innov8, set up by Ms Doucet and two former NHS IT specialists, including Ian Smith, formerly deputy IT director of Nottingham University Hospitals Trust, to develop solutions for the NHS.

They have created Mobile Medical Workspace providing an integrated solution that is helping trusts to virtualise desktop delivery and bring about significant improvements in quality, safety and efficiency.

“Take a day in the life of an orthopaedic consultant,” says Ms Doucet. “He’s on the ward seeing patients and logged into a patient information system on the ward desktop using his NHS Smartcard. He sees



**Fast forward: new technology promises an end to long waits at the keyboard**

his own desktop and with a single sign-on can access all his clinical applications.

“Then he gets a call from the ED about an elderly patient with a suspected fractured neck of femur. He pulls his card out of the PC and into a reader on his iPad where he can view the PACS image as he walks down to the ED. He can show the patient the image, discuss the care plan, log into the bed management system or order any tests from the iPad.

“Then he goes to an outpatient clinic or to a ward in a different location, perhaps even offsite in the community. He can log on to his own desktop session and information anywhere, anytime and on any device.

“This has the power to transform how, where and by whom care is delivered and bring about significant improvements in quality, safety and efficiency.”

And it is not a fantasy.

Nottinghamshire Health Informatics Service is one of the largest and most forward-looking ICT services in the UK, supporting the technology requirements for NHS trusts and commissioners right across

## **‘IT must remove rather than create pain points, supporting clinicians to deliver the best care’**

primary care, acute and community hospitals, GPs and other public sector organisations across the county. It has already implemented VMware virtualisation solutions in a large community health clinic and GP practice and is now implementing the Mobile Medical Workspace “follow me” desktop within an acute hospital.

Mike Press, assistant director of IT at NHS, says: “Today’s IT directors and health informatics services need to become an enabler and business value creator. Rather than IT driving how clinicians work, IT must remove rather than create ‘pain points’, supporting clinicians to deliver the best care, at the best time in the best place.

“We wanted to develop a simple, cost effective and scalable solution which

responded to the needs of our customers – instant, always available yet secure access to a wide range of clinical information and applications regardless of their location or choice of device,” he says. “We wanted to work with a strategic partner who truly understands how we wanted to add value as an IT provider, and who could help us to procure the best available technology and virtualisation solutions.”

VMware, Innov8 and the NHS are at the start of what Ms Doucet hopes is a sea change in how clinicians access critical information, one that will deliver tangible benefits for staff and patients alike.

“We are currently undertaking a detailed reference study to really bottom out some of the data about sign-on and the time clinicians waste,” she says. “But the really interesting part will be working with clinicians and managers to understand how this technology can help them transform the services they provide and help the NHS to develop entirely different and better integrated models of care across health communities.” ●

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