BARCODE TECHNOLOGY

DEVELOPING A SCAN-DO ATTITUDE

The potential of barcoding to play a key role in transforming the NHS is now being realised, with demonstrator sites already under way on work that is expected to make significant savings. Claire Read reports from the GS1 UK Healthcare Conference

The night before this year's GS1 UK Healthcare Conference, Lord David Prior was out having dinner. "Someone asked me what I was doing the next morning, and I said I was going to be talking about barcoding standards."

He added, to appreciative laughs of recognition: "Well, it's not exactly a conversation ripper, is it?"

In retrospect, the minister for NHS productivity suspected some alternative phrasing would have impressed his dinner companions more.

"If I had said I'm talking about the transformation of the NHS, which is what it is all about, then it probably would have gone down better. What can be achieved by something as prosaic as barcoding standards in terms of standardisation, in terms of patient safety, in terms of getting really deep and accurate costing around clinical practice, can be a hugely important part of the future of the NHS."

Track and trace

That belief is sufficiently strong in the Department of Health that, two years ago, it mandated the implementation of a standard barcode system in English healthcare. The 2014 *NHS e-Procurement Strategy* made clear GS1 standards should be used, making it possible for codes to be read globally at any point in the healthcare supply chain.

When Pat Mills joined the department a year later as commercial director, he found "GS1 was a very small part of the portfolio". But he told conference delegates that was no longer the case, and the implementation programme was quickly accelerating.

"The whole GS1 rollout is the world we need to get our health service into," he stressed. "It's the world where we can actually track and trace all the way through, be it medicines, be it products, be it patients; the world where we will have detailed information on patients, on outcomes, on correlations; the world where we actually know everything we've bought and where it sits in the supply chain, where it sits in inventory, and we can actually manage our inventory properly – we don't have to keep throwing things away because they're out of date.

"That is the world where we are actually going to start operating more efficiently, and we can take a lot of money out of the system," he argued. "There is a lot of money washing around in our health service that is just wasted. It could be going to our patients, could be going to frontline services, could be buying that new MRI scanner.

"And this programme is one way, and a very big way, of liberating some of that cash.

'Patient safety is absolutely at the top of the list of reasons we're committed to GS1 as an organisation'
Nick Thomas

Lord Prior, national patient champion Ashley Brooks and

Improving productivity, reducing inventory, giving us better control of what we purchase, getting us better deals. It is incredibly important."

Pioneering the work are the GS1 demonstrator sites: Derby Teaching

'There are many, many opportunities for technology to enhance patient safety'

In 1994, when she was just three hours old, Abbie Humphries was abducted from Queen's Medical Centre in Nottingham. It took 17 days before she was reunited with her parents.

For many, the traumatic event was a stark introduction to the value of electronic tracking in healthcare. That includes Professor Terence Stephenson – Abbie's paediatrician at the time, and now chair of the General Medical Council.

"There are many, many opportunities where we can use technology to enhance patient safety," Professor Stephenson told delegates at the GS1 UK Healthcare Conference. "I believe technology can hugely benefit the practice of medicine if only we would adopt it, and barcoding is one very good example."

The six GS1 demonstrator sites are leading that adoption, and a key theme emerging is their focus on the clinical benefits of barcoding.

Glen Hodgson – with foam-covered microphone ready to launch at the next speaker in the audience

'A lot of money in our health service is just wasted. This programme is one way of liberating some of that cash'
Pat Mills

Hospitals Foundation Trust, The Leeds Teaching Hospitals Trust, North Tees and Hartlepool Foundation Trust, Plymouth Hospitals Trust, Royal Cornwall Hospitals Trust and Salisbury Foundation Trust. Named in January 2016, the trusts will share £12m of Department of Health funding, with a view to demonstrating the benefits of barcoding standards.

The demonstrator sites are due to run through to the end of next year, but Mr Mills reported: "We should see early signs of savings later this summer. Certainly by the end of this year I would hope we've got documentable savings and can start building cases and getting more money out of the system to start more people implementing GS1 standards."

Some 29 trusts applied for the six demonstrator slots available, a level of interest Mr Mills said had taken him by surprise. "It was great to see that level of engagement. We're at the start of a journey,

"Certainly at our trust, we're very clear with our messaging – this is about improving patient safety and patient experience, as well as giving us some answers to financial challenges," reported Lorna Wilkinson of Salisbury Foundation Trust.

"It should not be seen as a finance or procurement-led initiative, and that is why as director of nursing I'm taking a leading role on this programme within our organisation."

She spoke of the potential to free up nursing time. "I know an inordinate amount of time is spent by nurses looking for equipment to deliver patient care, topping up stock, overstocking. I think if we can overcome that, we can make working much more efficient and ultimately release those nurses to actually be caring for patients."

The clinical benefits were echoed by Nick Thomas, deputy chief executive of Plymouth Hospitals Trust.

"Patient safety is absolutely at the top of the list of reasons we're committed to GS1 as an organisation, whether we're talking about product recall, or e-prescribing, or the ability to put in place safe controls and processes within theatres. Improving the patient experience is, too – if we can get the right thing to the right people at the right time, every time, then obviously that's going to have a significant benefit for the patients we look after."

A clinically focused approach to GS1 has already paid dividends at Derby Teaching Hospitals Foundation Trust. In 2014, the organisation began the implementation of GS1 standards and introduced scanning units.

A barcode is scanned on the patient wristband, along with codes on everything which comes into contact with the patient in theatre. That includes staff, whose barcodes are scanned when they arrive for the operation, and when they leave at the end of it.

Kevin Downs, the organisation's director of finance and performance, was keen to introduce the system as a means of stock control, along the lines of what he was familiar with from his work in retail and manufacturing.

However, clinical director for general surgery Keith Jones told delegates the use of barcoding and GS1 was now doing so much more than stock control. "It's grown into this huge project for us, informing and enlightening lots of our staff, including clinicians."

Thanks to the barcoding and scanning system, Mr Jones is now able to see exactly how long a procedure takes a surgeon, how many other staff were assisting, and the quantity of consumables used. It's allowing useful comparisons.

"It doesn't tell me anything about outcomes, yet, or complications, yet – but it will. But what it does tell me is that we really look at how we do things, and who does these things."

"This is not about procurement for me – it's about much more than that," he stressed. "This is really about us understanding what we do clinically, and the data informing us what we're doing." ●

it's going to take a while, but we're up and running."

There is a caveat, however: the large proportion of trusts still not working on GS1 implementation.

"We have 34 trusts who aren't engaged at all, and we have 67 who we politely classify as 'with leads', which means that a lead on GS1 been identified but they're not really doing very much. So about two thirds of the trusts are not really engaged in this programme yet. One third are in the vanguard, and are moving forward. That's great. But we need to start moving some people out of that trailing two thirds to getting on the train, getting with the programme."

Just as Lord Prior suspected a change of emphasis may have improved his dinner conversation, so other conference speakers said enthusing the laggards may be a matter of changing the focus. It is notable the demonstrator sites have decided to call their programme Scan4Safety.

"Our overarching aim is to improve patient safety through the use of these standards," Lorna Wilkinson, director of nursing at Salisbury Foundation Trust, told delegates. "I'm delighted we've adopted the Scan4Safety name – I think it really translates for our staff and patients what we are aiming to achieve through this programme of work."

As Glen Hodgson, head of healthcare at GS1 UK, stressed: "The beauty of GS1 standards is they deliver patient safety, regulatory compliance and financial efficiencies."

He argued that it was fundamentally wrong that, four years after the PIP breast implant scandal, 30,000 women in the UK are still unsure whether they have the defective implants – particularly given that the retail industry has been able to trace from farm to fork for decades.

"Implementing GS1 in healthcare is not an IT project or a financial department project or a purchasing project," agreed Lord Prior. "If we're really going to embed GS1 barcoding into hospitals, we have to accept this is a behavioural or cultural issue, not a technological issue.

"If you have clinicians who can see the real value in GS1, then we've got a real chance of getting it established. I think the clinical arguments are so strong that we have a very good chance of winning that argument with clinicians, and I think if we do we will take a big step forward towards greater standardisation and better care."

The minister said he was convinced that exposing unwarranted variation – as is possible through GS1 standards and barcoding scanning – was the only way to bring improvement and change to the NHS.

"We have used targets, and of course they have a role, but we know the perverse effect of skewed clinical priorities, and the gaming that goes around targets.

"We've tried decentralisation through foundation trusts and clinical commissioning groups, but the unintended consequence is it makes it much more difficult to deliver an integrated system of care, because everyone is looking after their own cash.

"We've tried top-down performance management, we've tried choice, we've tried competition, but actually the market is so imperfect in healthcare that we can never rely upon it in the way you can in industry. And we've tried regulation, and then of course you end up with a culture much more around compliance than improvement.

"So where it leads me is that I think that the way forward is to expose unwarranted variation. And one of the reasons why I believe exposing variation is the most powerful lever for improvement is I think it's the only way we will get true clinical engagement.

"If we can't engage clinicians, we'll never get real, sustainable improvement. We may get short term improvement through targets, for example, and we may get it through regulatory systems, but to get long term, sustainable improvement, we have to get clinical engagement."

Long journey

Professor Terence Stephenson, chair of the General Medical Council and a member of the GS1 UK healthcare advisory board, admitted gaining that engagement on barcoding could be challenging.

"Doctors are not luddites, they like technology, they like embracing new gadgets. But the trouble is they like it to be their own gadget – what they don't like is standardisation, they like autonomy. So I think one of our challenges for us in GS1 is we have to get clinical leadership on board, we have to ensure the demonstrator sites demonstrate proof of principle, and then roll that out and make sure that we get the clinical community to adopt this."

Mr Mills encouraged the more than 350 people attending the conference to be part of engaging colleagues in the value of GS1. "What I want from all of you is evangelise, enthuse, lead, share," Mr Mills told delegates. "Let's get everybody with the programme. It's amazing to see how the programme has grown; it's amazing to see how many people are here at this conference – we've got standing room only. That's fabulous.

"But we've only got about a third of trusts engaged so far. It is a long journey, we've got a lot to do, but the size of the prize is enormous both for the patients and for the finances of the system." ●

Glen Hodgson

Lord Prior

Case study: South Australia Department of Health

In 2006/07, the Australian health service was facing a situation which will be familiar to colleagues on the other side of the world: financial crisis. The government concluded that without a radical transformation in the way healthcare did business, a publicly funded system was no longer possible.

Keith Jones

Pat Mills

Lorna Wilkinson

Professor Terence Stephenson

'Saving money saves lives, because the money we save by disinvesting in inefficient practices we can reinvest in the things that work'
Professor Terence Stephenson

In another similarity with the British system, procurement was quickly identified as a key area in which improvements could be made. South Australia, for instance, had 70 hospitals, each with a separate database of product information and spend. Each institution was placing its own orders with vendors, meaning economies of scale were non-existent.

The South Australia Department of Health felt the situation was untenable, and so looked to technology and GS1 standards to change it. The department took the decision to tender for a master data management (MDM) solution, a way of ensuring there was one reliable source of information for all hospitals to use for procurement. The solution uses GS1 standards to help ensure consistency and accuracy of information.

"One of the key benefits was reducing errors," Bang Chau, vice president international business development at Innovit – which supplied the system – told delegates at the conference. "There was an army of administrative people in hospital procurement teams as well as clinical staff on wards who spent time relying on essentially bad quality data for ordering, invoicing and ultimately fulfilment."

Making sure the correct product data is held in one database does not just reduce mistaken orders. It also enables easier tracking of what is being bought by who. "The government wanted to be able to collect data to be able to improve spend analysis, and therefore achieve better tendering and better contracts. A lot of data metrics and quality metrics around tracking inventory, spend and usage is improved through better quality master data."

The system went live in March 2016, and Mr Chau says 'trust the data' has become a catchphrase locally. "While in the UK things are still at the early stage, I am willing to bet that over the next two or three years, this will become a very common catchphrase in the UK market too – it's all about data that is consistent, accurate, high quality, reliable, that you can transact on and make decisions on, with confidence that it is correct."

THE FINANCIAL BENEFITS

The clinical benefits of GS1 standards and scanning do not negate the financial ones, of course – they go hand in hand.

At Derby, the data Mr Jones uses to explore clinical practice has also changed purchasing practice. In his specialty of head and neck surgery, for instance, any screw used in reconstruction surgery is now purchased pre-sterilised.

"It costs an extra 50p per pack, but we only scan what we use and we only open what we need. Previously we had a tray of screws, and every one was being re-autoclaved and re-autoclaved, and we were paying a fee based on the number of items. We've now done away with that, because we've learnt from our tracking system. We track everything, down to the single screw."

Mr Downs believes it is this sort of attention to detail that is saving £25,000 a month in general surgery, imaging and cath labs alone.