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US reform: finding room for agreement

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Amid the political horse-trading that dogged progress on US healthcare reform, cries for more investment in information technology were rarely heard – at least not in television sound bites.

Yet experts and IT companies argue that, for healthcare systems in the US and elsewhere, driving technology across the system has huge potential not only to drive out costs but also to improve patient care and save lives.

Much attention has been focused on digitising patient information, with the US administration's economic stimulus providing funds, including grants to promote the adoption of electronic records. However, this is not the only part of healthcare management that is ripe for the application of IT.

Communications technology alone brings great cost and efficiency gains. In the UK, using the National Health Service's N3 broadband network, hospitals and medical practices can save money on phone calls by switching to voice over internet protocol technology. The system also facilitates videoconferencing, in which multidisciplinary teams conduct diagnoses virtually.

While questions have been raised about the rising cost and delays associated with the NHS's ambitious IT overhaul, Len Chard, N3 programme manager points out that applications such as videoconferencing will generate big cost savings.

He reckons it will cut £100m from travel spending in the first year of operation, and roughly the same value in staff time. "And business travel is real money that the NHS can use for better things," he says.

Being able to hold virtual meetings also speeds up patient release procedures. "In the past, one of the problems has been getting all the right people together to discuss whether or not the patient can go home," says Mr Chard. "They can now hold those meetings over N3 – and that releases beds earlier."

Meanwhile, as the devices doctors use have proliferated, IT companies are developing time-saving solutions that also make working life simpler for doctors. Dell – which found that hospital medical staff spend up to an hour a day looking for workstations with the applications they need – has developed a system called Mobile Clinical Computing.

It allows doctors instantly to authenticate their identity and bring up a virtual desktop on whatever device is to hand, whether a laptop, tablet or handheld. Security is enhanced because patient information and applications are hosted on a data centre, rather than on the device.

Yet despite the gains such systems bring, much of the technology being developed for healthcare management has already been deployed in industries such as financial services or retail for decades.

"In other industries, it's a no brainer," says Bill Shickolovich, chief information officer of Tufts Medical Centre, which with Dell and eClinicalWorks is rolling out electronic medical records across its affiliated doctors. "But healthcare has always lagged behind other verticals."

Part of the reason for this is the fragmented nature of the industry, which ranges from one-person medical practices to large hospitals. In the US, the sector is particularly complex with networks of employers, insurers and providers making up the health ecosystem. And healthcare operations generate an astonishing range of types of data.

"There's this complexity in the healthcare industry," says Sean Hogan, vice-president of Healthcare Delivery Systems at IBM. "You have data coming from a number of places and in multiple formats – structured and unstructured text, clinical notes, audio files.

"You have different semantics and uses of language between practices and countries. And different departments all often have their own processes and workflows."

Moreover, in the US, traditional healthcare remuneration patterns – with payments for the number of patients treated or procedures conducted, rather than the results of those treatments – have provided little reason to invest.

"If a practice is getting paid on fee for service as opposed to outcomes of quality, it doesn't matter whether they have technology or not, if they can see the same amount of patients," says Mr Shickolovich.

Until recently, this has this not created much of an incentive for vendors to invest either. "The way the software works has not been as physician-friendly as it could have been – it's been a little clunky," says Mr Shickolovich. "Because there's been no market for it."

However, the biggest hurdle to deploying IT across healthcare systems is interoperability. Because each segment of the sector – from doctors and other providers to insurers – has its own business models and data requirements, IT companies have developed sector-specific products.

James Coffin, who heads Dell's Healthcare and Lifesciences business, compares it to the evolution of financial services. "Twenty-five years ago, if you wanted to go to an ATM, you had to go to your bank, in your town," he says. "Now you can go to a machine in Kazakhstan and access your financial records – that's where we need to get to in healthcare."

A big push towards this kind of interoperability is now under way. Moreover, greater patient involvement in healthcare is seen as having great potential to improve care and lower costs. Technology companies certainly think so, and are launching online databases, such as Google Health and Microsoft's HealthVault.

Of course, concern about digitisation of information cannot be ignored. In the US, four in 10 consumers have concerns about privacy and security associated with the use of electronic patient health records, according to a report by the Deloitte Centre for Health Solutions.

"The thing that's surprised us is the fear factor among consumers," says Paul Keckley, executive director of the Deloitte centre. "Seniors, who drive most of the healthcare spending, have huge reservations, so you have this huge generational gap that won't go away quickly."

Yet even this is starting to change. With the emergence of a new generation of consumers for whom accessing medical records online is not daunting, many of the investments now being made in healthcare technology are in consumer-facing ones.

And electronic records become more powerful when connected to remote patient monitoring devices. In a system jointly developed by IBM, Google and the Continua Health Alliance, information from personal medical monitoring devices can be automatically streamed into Google Health Accounts or other health records, giving doctors real-time feedback on patients' conditions, helping prevent costly trips to the emergency room.

Regina Herzlinger, a Harvard Business School professor widely recognised for her research in healthcare, believes this kind of technology has huge potential to carve costs out of the system, improve health and save lives.

"Anything connecting patients to their care is highly promising and tremendously cost effective," she says. "And the patient has every incentive to go along with this. Because if, for instance, you're a diabetic and you go into shock, you can die."

Stan Nowak, chief executive of Silverlink, would agree. His company's applications use everything from e-mail, web letters, automated voice and text messaging to connect clients more efficiently with their patients. The applications are tailored to information the company has gathered on how individuals prefer to receive information on their health.

The results of one study demonstrate the power of this technology when it comes to increasing patient adherence to medications – critical in preventing critical illness and reducing the need for expensive emergency treatment. "People who got customised messages about staying on their cholesterol-lowering medications stuck with them at a rate 82 per cent higher than who didn't get those messages," says Mr Nowak.

At the same time, social networking in healthcare is growing fast – and not just among those working in the health industry. A patient-to-patient healthcare movement is emerging, with individuals sharing information about their symptoms and the efficacy of their drugs online.

"For the longest time, there's been a sense that health organisations managed your health information," says Ajay Easo, a researcher from Accenture's technology lab in Chicago. "But now you're seeing a decoupling of that where consumers and patients are owning their health experience."

While sceptics continue to highlight privacy and security concerns and mixed early evidence of the financial payback of electronic patient records, others argue that IT must play a central role in the management of healthcare if costs are to be contained and quality of care improved.

"I'm convinced we'll get over all this," says Mr Keckley. "And in a few years from now, it'll be ubiquitous."