

Somewhere in the fog

The National Health Service is big. Very big. If you took every NHS employee and made them all hold hands in a chain, say a metre each apart, then the chain would stretch for almost 1400 kilometres. Conveniently, this is the exact distance by road from Land's End to John O'Groats (allowing for a few diversions along the way). Almost one in ten of the UK's working population depends upon the NHS for their income, either as an employee or as a supplier. No wonder, then, that any project that involves the whole NHS is necessarily going to be the biggest project in the country – if not the world. A project to repaint every NHS waiting room would probably be the biggest interior decoration project in history. Today, for example, one quarter of a million people will receive some NHS help in their homes.¹ If you are reading this on an average working day, then over one and a quarter million Britons will be seen by an NHS doctor today. That is a crowd that would fill out every seat at Manchester United 18 times over. 160 000 of those (or nearly two and a half Old Traffords) will be seen today during a hospital outpatient visit. Nearly 1500 babies will be born today, delivered by NHS midwives and doctors; hospital laboratories will report on the results of around five million tests, around 200 people will have hip replacement operations, and the global pharmaceutical industry can look forward to dispensing around one and a quarter million NHS prescriptions. Can you hear an ambulance siren? There will be over 7000 emergency ambulance trips today. And it's a typical day.

Yes, a typical day. But more things will happen today in the NHS than we might care to think about. The NHS will spend around £170 million of taxpayers' money today² – that works out to a little under £2000 every second. Surprisingly, around £10 million today will be spent settling litigation claims, which the National Audit Office³ estimates as costing about £3.9 billion a year. Why are people suing the NHS? According to Dr Foster, a medical research firm (www.drfooster.co.uk), 110 people will die in NHS care today because of 'adverse events'. Other people put this number higher. The Office of Health Economics calculates about 173 deaths. Today. In NHS care. Effectively these people will have been killed accidentally because of mistakes in their treatment. That might be one reason why the litigation claims are so high. Can you imagine if the Post Office was accidentally to kill 173 people every day? Or the railways? We are surprisingly tolerant of this death rate, because we know in our hearts that the NHS is a benign organisation, doing its best to help us, not trying actively to kill us. But should we be so tolerant where these adverse events are due to poor management, inefficient processes, negligence, and easily avoidable human errors?

Thankfully not every 'adverse event' kills the patient. Today about 1230 patients will suffer one of these adverse events.⁴ About 270 of these will fall victim to an infection today that they have contracted in hospital. That is quite an adverse event, and if you are a patient in an NHS hospital it may be little comfort

to know that you have around a 9% chance of contracting such a bug. Around two to three people will die today in the NHS from one of the worst of these – an MRSA infection. MRSA is an acronym for methicillin-resistant *Staphylococcus aureus*. It is an infection almost exclusively contracted by patients in hospital, and the most common cause of infection is bad hygiene. Treating patients with MRSA infections will cost the NHS about £2.8 million today, and again tomorrow, and again the next day. Infection isn't the only adverse event that will impact patients in NHS care today, even though this is often the one that the newspapers seem most concerned with. It will cost the NHS £1.3 million today, and every day, just to treat patients for the effects of mistakes in prescribing.

So computerising the NHS is a logistical challenge as well as a technical one. It is a challenge of scale. Like the electrification of the Soviet Union, there is no way to do this on a small scale; and like the building of the Channel Tunnel, there isn't much point in only going half way. So big is this project, that even to people closely involved in it, the whole task can seem like a city enveloped in a fog. Like pedestrians in the fog, you can see the buildings around you reasonably clearly, but there is no single point which will give you a clear view of the whole city. Even if you climb a tall building for an aerial view, all you can see is a whole lot of fog.

To start with, the National Programme for IT (or 'NPfIT' as we must learn to call it) is only concerned with the NHS in England. It does not extend to Scotland, Wales, or Northern Ireland. In due course those regions may embark on programmes of their own. For now they are firmly outside NPfIT. Secondly, the National Programme is not, as it turns out, a single programme. The press often talks about 'a new computer system for the NHS', rather creating the impression of a single gigantic computer. In fact, eight separate programmes combine to make up the NPfIT. They are:

- 1 One NASP (National Application Service Provider) contract to provide the 'National Data Spine' – destined to become the biggest computer database in world history.
- 2 A New National Network (N3) – a broadband network to support all the applications and to connect GPs, hospitals and other health and social care providers across the country.
- 3 One project for Electronic Appointment Booking (eB) (now called 'Choose and Book').
- 4 Five Local Service Provider (LSP) 'cluster-wide' contracts to provide a NHS Care Records Service (NHS-CRS) at a local level – in the North West and West Midlands, in the North East and Yorkshire, in the East of England and East Midlands, in London, and in 'the South'.

Altogether this will amount to a lot more than 'a new computer system'. Ultimately there will be several hundred computer systems. But the key thing is that they will all be connected. And that, for the NHS, will be a wholly new event, as we shall see.

It appears that the first objective of NPfIT is to computerise patient records. That means that your record of encounters with the NHS, all your appointments and medications, all your doctor's notes and diagnoses, your test results and your X-rays, and countless other bits of information collected about you, as a patient, will be held on a computer. But that record won't create itself. So either the NHS

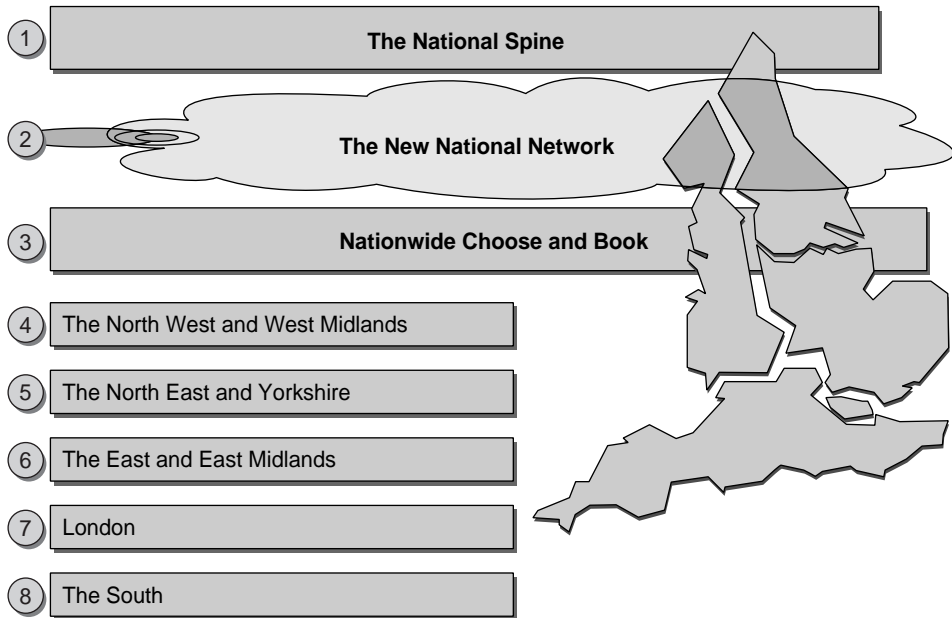


Figure 1.1 The National Programme for IT

will have to provide an army of data-input staff to type all that information into your electronic record, along with the systems to support all that activity, or else they have to create a way where the information is collected as part of the process of care. Here in a nutshell is the information challenge for the NHS. To provide you and me with a computerised patient record it won't be enough just to build a huge database and expect it to fill up with data. The NHS will need to introduce a system that will provide clinical support (which means helping care givers to do their job), and administrative support (which means helping administrators to do their jobs). This is the second objective of NPfIT. But it is so closely linked to the first objective that the two are hard to disentangle. Without providing tools to help the people who work in the health service, you won't get the electronic record that will help them to treat you properly.

The programme is intended to make use of technology to support the core objectives of the NHS. It is expected to deliver an improvement in the ability of clinicians (doctors and nurses) to track case notes (until the paper record becomes redundant), order tests and view the test results online, prescribe drugs and record and view other essential clinical information. It is also expected to provide a real-time view of a patient's status in the system, helping to reduce waiting times and improve clinical outcomes. Eventually it will offer NHS staff some streamlining of prescription ordering and appointment booking, and ultimately it will ensure that all healthcare organisations and all care settings from the doctor's surgery to hospitals, paramedics and social services have a single view of the patient, enabling more accurate diagnosis.

It is the boldest vision that any government has ever taken with respect to computing – and it comes against a historical background of high-profile failures in big government computer projects. So why is it happening? Have governments

not learned anything from the disasters of the 1990s? And why is it costing so much and taking so long to deliver?

The answers, as you might expect, are complex, and hard to unravel. But one reason really stands out. Governments in Britain rise and fall upon their ability to manage a successful NHS. Every General Election brings a daily welter of statistics on waiting lists and outcomes, on the number of new nurses versus the number of administrators, on the number of ward closures, on the costs of dentistry and eye tests and prescription charges, on the prospects of contracting MRSA, on the hours worked by junior doctors, on nurses' salaries, and of your chances of surviving a heart attack in England compared with, say, France. Anecdotal stories of patients left on trolleys, of misdiagnoses, of errors and delays – these hog the tabloid headlines and drive the political agenda of every major party. The NHS can – and does – determine who wins and who loses where national politics is concerned. And yet there is a dreadful dilemma at the heart of all this, facing every occupant of Number 10. The costs and demands of healthcare are growing faster than the ability of the exchequer to pay for it all. The cold equations of healthcare have convinced even the most computer-sceptic parliamentarians that we can never find and recruit the number of nurses and doctors we need as demand grows – that even if we raid the medical schools and nursing colleges of Eastern Europe and Oceania in search of new recruits (as we have been doing) we cannot do this indefinitely. We need to do something else. We need to modernise the service. And that is going to take some serious IT.

In one of the meeting rooms of 10 Downing Street in February 2002 a routine meeting took place. It was a seminar where a clutch of very senior people would discuss the problems of the NHS, and try to explore ways to modernise the service. Round the table were Alan Milburn, the Secretary of State for Health, senior figures from the Department of Health and the Treasury and two IT companies. One of those companies was Microsoft. Whatever was said at that meeting, it has now become part of NHS history. A decision appears to have been taken that would start a train of events that would gather momentum in the weeks and months to come, until it became an unstoppable, invincible force. This decision was that a serious programme was needed to introduce information technology into the NHS in England. Previous IT initiatives, and there have been many (as we shall see), were dismissed as having been ineffective and insufficient. The NHS was not an IT organisation, yet it was expected to procure, operate and maintain thousands of computer systems. This was hardly the core business of a health service. One of the Downing Street decisions was, it appears, to outsource the huge computing responsibilities of the NHS to some very big companies, companies who should be able to bring massive expertise to the problem, who should be able to mobilise to build, deliver and support systems for almost a million users.

Who have been the key players in this unfolding drama? The Prime Minister, Tony Blair, of course; a decision of this magnitude can only have been made with his explicit support. The Health Secretary must have been persuaded that this would be a wise allocation of funds. The Chancellor, Gordon Brown, would have to have been close to the decision. Even though the price under discussion was 'only' around £2 billion at that time, it is unlikely that a decision to spend even this amount could have escaped his closest scrutiny. A man who appeared early on the scene was Professor Sir John Pattison. His job title at this point was

seemingly innocuous. He was Director of Research at the Department of Health. His title belied his influence. From the start it seemed that it was Sir John's vision that was driving the programme in its early stages, and his judgement that was persuading the Whitehall mandarins. On 6 October 2002 a new figure appeared on the scene, recruited by Sir John. It was this man who was to become so closely associated with the programme that for much of the next two years this seemed like a personal campaign. His appointment was not without controversy. Joining from city consultants Deloitte, he became at once the highest paid civil servant in Britain on a reported salary of £250 000 a year. He came with a huge experience of public sector projects, with a famous no-nonsense approach. It was an early indication of the importance that Downing Street attached to the project. At the time of writing he is still Director General of NHS IT. His name is Richard Granger.

Among the barbs that were aimed at Granger in the early months of NPfIT was the accusation that there was no one at the heart of the programme who was seen to represent the doctors. This was resolved in January 2003 when Granger was joined by an obstetrician, Professor Aidan Halligan, formerly Deputy Chief Medical Officer, Director of Clinical Governance and Head of the Clinical Governance Support Team (CGST) for the National Health Service (NHS) in the United Kingdom. Professor Aidan Halligan, an Irishman, took up a position to join Richard Granger as joint Senior Reporting Officers for the programme, a post where he remained influential until his departure to become Chief Executive of the Irish Health Service in September 2004 – a post he subsequently did not take up.

How much is the National Programme going to cost?

We will probably never know. You may have seen the programme reported as a £2 billion project – or maybe as a £6 billion project – or maybe even more. It all depends on what we are counting – and for how long (and for purists, we seem to have finally settled on the American billion – or one thousand million). The first headline figure for NPfIT was £2.3 billion. This was the figure announced by Richard Granger, the Director General of NHS IT, in January 2003. The £6 billion number is also easy to understand. It represents the lifetime value of the contracts actually awarded – where each contract will run until 2013. These are:

Table 1.1

<i>For what?</i>	<i>Awarded to?</i>	<i>Worth how much?</i>
North East cluster	Accenture	£1,099,000,000
London cluster	BT (Capital Alliance)	£996,000,000
East & EM cluster	Accenture	£934,000,000
NW & WM cluster	CSC Alliance	£973,000,000
Southern cluster	Fujitsu Alliance	£896,000,000
The National Spine	BT	£620,000,000
Choose and Book	SchlumbergerSema (Now Atos Origin)	£64,500,000
New National Network	BT	<u>£530,000,000</u>
Totals		<u>£6,112,500,000</u>

But of course, there are costs that are not included in this total. In November 2004 the NHS struck a new three-year software licensing agreement with Microsoft, for example, for which it will pay a reported £500 million. There will be networking, infrastructure and devices at every site, which are not included in the contracts shown above. There are central management costs of NPfIT and the NHSIA. A £37 million, three-year contract was awarded in 2003 to consultants Kellogg Brown and Root to oversee the project planning, procurement support and implementation of the National IT Programme. The full value of this contract over 10 years could be worth up to £117 million. And then, of course, there are all the NHS employees who will be engaged full-time (or part-time) on the project between the time when the programme started – say in January 2003 – and when it finally comes to an end in 2013. At the very least this will add another £1 billion to the total. Add to all this the expectations of growth and new service additions by the existing service providers, termination costs for switching off legacy systems early, power, consumables, overheads, and cost overruns.

In October 2004 *Computer Weekly* ran a story that was quickly picked up by the national press and media forecasting that the total bill would fall around £18.6 billion and could rise to £31 billion. A figure of £40 billion was soon being discussed in the press. These figures were quickly dismissed as speculation by the health minister, John Hutton, who has responsibility for the National Programme. 'There is no evidence whatsoever that that this will be the cost of implementing the National Programme for IT,' he told Today programme listeners on BBC Radio 4. Hutton said instead that the £1 billion a year currently spent by the NHS on maintaining a 'hotchpotch' of 5000 separate systems should cover the costs of implementation. The figures appear to have originated from estimates drawn up by Department of Health officials and leaked to *Computer Weekly*. However, even pessimistic insiders would probably agree that they look unrealistically high.

A spokesman from the Department of Health was reported to have said, 'It is generally accepted in the IT industry that implementation costs are some 3–5 times the procurements and this is reflected in the business case that was made for the national programme.' That would explain the £18.6 billion figure.

But this kind of expenditure is exactly what was recommended by Derek Wanless in his review in 2002,⁵ which suggested, although never explicitly stated, a doubling of investment in ICT, from 2% of total NHS budget to 4%.

Let us imagine that the current spend on computers and associated technology of a Strategic Health Authority may be, say, 1.4% of the authority's total budget. NPfIT will deliver an additional 1% centrally and the Strategic Health Authority will have to find an additional 1.6% (to make up the total ICT spend available to 4%), from local growth.

Whatever the final bill is, would anyone like to argue that the cost of NPfIT will not exceed, say £20 billion by the time it is all complete? As a service for England only, this would have cost the good people of England about £400 a head – or £40 each a year. Will it be £40 well spent? Let us find out.