postnote

NEW NHS IT

The Government has recently signed contracts for a £6 billion modernisation of NHS computer systems in England.[1] This national IT programme has four main parts: electronic patient records, electronic appointment bookings and electronic transmission of prescriptions, along with an upgraded NHS broadband network. However, it involves both managing a large IT procurement and imposing change on the highly devolved NHS. This POSTnote outlines the main projects in the national programme and their potential benefits, then examines key concerns, such as confidentiality, funding and involving clinicians.

The National Programme for IT (NPfIT)

The Treasury's 2002 Wanless report on the future of the health service argued that the NHS record on IT was very poor. It suggested two main reasons for this:
- IT budgets – which had traditionally been allocated locally – were often used to fund other areas of spending to relieve short-term pressures;
- inadequate setting of central IT standards, resulting in a range of incompatible systems across the NHS.

The report recommended a doubling of IT funding, ring-fenced to ensure it was spent on IT. In summer 2002, the Government set up the National Programme for IT (NPfIT) in England, with £2.3 billion over its first three years. This will be the world's largest healthcare IT system, with four main projects (considered below) to be introduced in stages across different regions. However, while the aims of the programme have been widely welcomed, some stakeholders are concerned over the ability of government to deliver such a complex IT project to meet users' needs and within a rapid timescale.

Electronic patient records

The new NHS Care Records Service is the core of the national programme, and will comprise a mix of local and national IT services. It will provide access to a nationally held electronic NHS Care Record for each patient, including demographic details and the patient's health and care history. This will be available to anyone treating the patient, including in an emergency or out of hours, and eventually to the patient directly. At present, records are generally held on paper, or on separate computer systems that cannot communicate with each other.

NHS Care Records will be introduced in three phases to 2010, moving from viewing basic patient information online to more detailed information, digital images (e.g. X-rays), and integrated health and social services records. Software will help clinicians choose tests and drugs, follow guidelines (known as National Service Frameworks) on caring for patients with specific conditions, and reduce treatment and prescribing errors.

Holding patient records electronically could result in less time being spent looking for lost records and test results and may enable better continuity of patient care between NHS organisations. In addition, anonymised information from records can be collected and analysed more easily for research and planning. The NHS Care Records Service will also manage electronic appointment booking and provide electronic transmission of prescriptions.

Electronic appointment booking

Electronic booking aims to let care providers (e.g. GPs) book hospital appointments, giving patients a choice of hospitals and information on waiting times. If patients do not want to book their appointment at the surgery, they will be able to book through a call centre or online. Trials suggest that the service will reduce anxiety for patients and decrease the number of missed appointments (currently ~10%). The first bookings should be in summer 2004, with the programme substantially in place by the end of 2005.

Electronic transmission of prescriptions

Currently, prescriptions are generally printed out, signed by the GP, and taken to the pharmacy by the patient. Electronic transmission would let GPs send prescriptions

electronically to pharmacists and on to the Prescription Pricing Authority (which manages prescription payments for the NHS). In principle, electronic transmission should reduce dispensing errors and decrease the need for pharmacists and the PPA to re-enter data. In a 2002/03 trial, over 50,000 prescriptions were sent electronically. This concluded that electronic transmission has the potential to reduce overall prescription fraud or irregularity, but some types may become more difficult to detect. It is aimed that 50% of transactions will be electronic by 2005, and all by 2007.

Communications network

BT has been appointed by the national programme to manage a new NHS broadband communications network. This New National Network (N3) will be higher capacity than the existing network, to meet the demands of the Care Records Service. The NHS is a key partner (with education) in the government's wider broadband procurement run by the DTI, and it is intended that BT will use this scheme.

Setting up the national programme

Box 1 details some of the organisations involved in the national programme. Formal procurement started in January 2003, and contracts signed to date are given in the table below. As well as the prime contractor, the role of subcontractors will be key, with a number of subcontractors involved in more than one service. The national programme and its constituent projects have all been subject to OGC 'Gateway reviews', which approve public sector procurements at predefined stages (such reviews are not published).

Contracts for the national programme

Service	Contract value	Contract period	Contractor
E-booking	£65m	5 years	SchlumbergerSema (now Atos Origin)
Broadband network	£530m	7 years	BT
National NHS Care Records Service	£620m	10 years	BT
LSP[1] South	£896m	10 years	Fujitsu Alliance
LSP East of England	£934m	10 years	Accenture
LSP North West/ West Midlands	£973m	10 years	CSC
LSP London	£996m	10 years	BT
LSP North East	£1099m	10 years	Accenture

1 LSP- Local Service Provider (see box 1)

Issues
Funding
The NHS currently spends around £850m each year, primarily locally, on IT systems and their support.[2] On top of this, funding for the national programme is £370m for 2003/4; £730m in 2004/5; and £1.2 billion in 2005/6. Further central funding will be needed to fund the supplier contracts for their ten year lifetime. However, central funding will not cover all aspects of the national programme's delivery and it is not yet clear what proportion of funding will need to be found locally.

Industry groups are concerned about 'planning blight', where local Trusts put procurement of new systems on hold while they await the outcome of the national programme. In addition, there is a risk that the explicit,

ring-fenced funding for the national programme will encourage Trusts to move some of their existing IT spend to other priorities. For IT expenditure to increase in line with the recommendations of the Wanless report, Trusts will need to spend more money on IT, rather than less.

Box 1 Who's who in the national programme
Director General of NHS IT, Richard Granger (who led the London congestion charging project) - responsible for buying and delivering technology for the national programme.
Primary Care Trusts – ensure the provision of health services in a local area by GP practices, community nurses, dentists, etc. Also responsible for integrating health and social care. Around 70% of the NHS healthcare budget is managed by primary care trusts.
NHS Trusts – includes acute trusts (hospitals), ambulance trusts, mental health trusts, etc. Found in most large towns and cities. Some Trusts may also act as regional or national centres of expertise for more specialised care.
Strategic Health Authorities (StHAs)- there are 28 Strategic Health Authorities in England, each with a Chief Information Officer responsible for IT. Each StHA is made up of a number of Trusts, and will be accountable for managing and monitoring local delivery of the national programme.
Clusters - for the NPfIT, England has been split into five clusters, each consisting of a number of Strategic Health Authorities and with a Regional Implementation Director responsible for implementing the national programme. A private sector **Local Service Provider** is responsible for providing the full range of IT services within the cluster.
NHS Information Authority - operates national IT services for the NHS. The Information Authority will support the implementation of the national programme, using its experience in providing infrastructure services such as NHSnet, the NHS Number Programme, the National Electronic Library for Health and the nhs.uk website.
NHS Modernisation Agency –helps develop and spread best practice. Aims to help Strategic Health Authorities manage the change in working practices and realise the benefits of the national programme.
Public Advisory Board - gives patients, carers and the public a say in how the new services are set up and used. The Board includes people from a variety of perspectives from groups such as the Patients Association, Help the Aged, Mind and the National Consumer Council. Chaired by Marlene Winfield from the national programme.
National Clinical Advisory Board – established to involve health staff and provide advice to the national programme. Chaired by Professor Peter Hutton, Chairman of the Academy of Medical Royal Colleges, members include representatives from 30 branches of the health service, such as GPs, nurses, consultants, and pharmacists.

Procurement
As well as its speed, procurement for the national programme has other innovative features. In traditional government procurement, the department chooses a 'preferred bidder' some time before the contract is signed. However, the national programme has kept at least two bidders in the running for each contract until the last minute, to maintain competition and avoid price rises. Contract terms include:
- a requirement to demonstrate and test the proposed systems, including making sure they all work together;
- suppliers won't be paid until their systems are delivered and working, with penalties for delays;
- suppliers can be removed if they do not meet performance guarantees.

Defending the procurement as *vigorous*, the Director General of NHS IT argues that it will allow faster improvements for patients and users. Suppliers have welcomed the shorter procurement timescales, and the NAO has commented favourably on the contracting approach. Nevertheless, some have expressed concern over the speed with which the national programme has moved ahead, suggesting that more time should have been spent on defining requirements. It has also been suggested that suppliers may have underbid to win the contracts, leaving them without enough money to actually deliver the services, although others point to the similarities in price between successful LSP bids as indication that they are realistic.

Implementing the national programme

Local vs national systems
The NHS has traditionally bought IT systems locally. While this has led to a proliferation of standards and little interoperability, some local Trusts have advanced IT - for example, Chelsea and Westminster Hospital uses portable wireless systems to provide patient information to clinicians on their rounds. For the first stages of the national programme, existing systems will be used where possible, but will be replaced if they cannot be integrated with the wider programme. Managing, integrating and replacing systems and converting data will be key responsibilities of the Local Service Providers, working with the NHS Information Authority, Trusts and StHAs.

Managing change
For the new IT to be introduced successfully, substantial effort will need to be given to non-technical issues, such as rationalising how work is carried out, encouraging people to use the new systems and learning from experience. For example, some clinicians have questioned the amount of time it could take for GPs to book hospital appointments online, and the impact of this will need to be assessed. According to the NHS Confederation[3], it costs at least as much to manage the changes introduced by IT as to deliver the IT itself. This is not within the remit or funding of the national programme, but will be the responsibility of the StHAs, supported by the Modernisation Agency. Funding for such initiatives will be a key issue, including the balance between central funding via the Modernisation Agency and local support from existing budgets.

Training
Around 850,000 NHS staff are expected to use IT from the national programme. Suppliers will develop training material, but training will be paid for and organised by local StHAs and Trusts, supported by the NHS Information Authority. Trusts will need to buy-out time while people train, and make allowance for the fact that productivity is likely to decrease temporarily after introduction, as people get used to the new systems.

Involving clinicians and users
Lack of effective engagement with stakeholders is one of the most common causes of project failure.[4] The NHS Care Records Service has been developed with input from clinicians, but surveys suggest that overall, clinician awareness of the national programme is low. In addition, many previous NHS IT systems have been under-used. There is general consensus that clinicians and other users should be closely involved in the national programme, to:
- ensure that the systems deliver what people need;
- learn from current best practice and past mistakes;
- provide leadership in local Trusts;
- encourage 'buy-in', and overcome scepticism due to previous failures to deliver IT systems.

One of the most important issues will be the cost of 'buying-out' clinical time, so clinicians can be involved in training and implementation. A forum run by the British Journal of Healthcare Computing suggested that clinical acceptance would be helped by a rigorous evidence base for the benefits of IT, support for 'champions' to encourage their colleagues, and ensuring that systems are easy to use during patient consultations.[5]

Health IT Staff
The national programme has ruled out wholesale transfer of current NHS IT staff to suppliers, maintaining that LSPs will deliver *new* services rather than replacing existing ones. ASSIST, an organisation for NHS IT staff, is supportive of the national programme but argues that many of the services delivered by LSPs will use current systems and staff. In addition, suppliers will need a large number of IT staff, and ASSIST is concerned that many NHS IT professionals may move into the private sector.

Data quality
For the NHS Care Record, it is envisaged that some data will come from existing systems in GP practices and hospitals, and the record will be built up over several years. In addition to the costs of collating the data, quality will be a key issue. The NHS Electronic Record Development and Implementation Programme (ERDIP) used 19 demonstrator projects in different regions. Issues around data quality included:
- identifying where data came from and who recorded it;
- difficulties in regularly updating information;
- reliably extracting patient information from GP systems, and to a lesser extent, hospital systems;
- the need for common data standards and incentives to ensure consistent recording of data by clinicians.

In later phases of the national programme, patients will be able to see their shared NHS Care Record online. This would let them add information about their treatment preferences, or ask for corrections to errors. In a recent study where patients commented on summaries of current computer records, more than half were amended by the GP as a result.

Security and Confidentiality
A new NHS Confidentiality Code of Practice sets out requirements on health staff to protect confidentiality, and provide informed choice for patients about how their information will be disclosed or used. Research indicates that patients are generally positive about their records being held electronically (see box 2). However, they are

concerned that information should be restricted to professionals treating them, and not be available to non-clinical NHS staff and non-NHS staff.

Box 2 Electronic health records - the public view

Research in 2003 by the NHS Information Authority, the national programme and the Consumers' Association, using interviews, focus groups and a survey found the following main points:

- Patients tended to overestimate the extent to which the NHS already works with electronic records.
- Reaction to NHS Care Records was 'extremely positive', but patients thought security was an issue.
- Patients pointed out the tension between patient confidentiality and the NHS having accurate and relevant information.
- Patients' biggest concern was that parties outside the NHS might have access to their health record e.g. insurance companies, employers and schools.
- Patients were most supportive about paramedics and ambulance crew being able to access part of their medical records (64%). Over half (53%) felt that hospitals *overseas* providing them with care should be able to access part of their record.

Source: The Public View on Electronic Health Records, Health Which? October 2003

According to the Consumers' Association, patients' main concern about the NPfIT is over security, with worries about viruses, hacking and reliability. EURIM, a Parliamentary IT lobby group, suggests that security for paper-based medical records is widely regarded as lax, but that such records have the 'advantage' of making it very difficult to collate all the data about any individual.[6] The most common ways to overcome security remain low-tech, e.g. bribery, but this may be reduced by limiting the information clerical staff can access.

NPfIT will allow access to clinical information only after three criteria have been met. Users must have:
- An ccount on the system. Users will log-on using two forms of identification, such as a smart card and a password. Eventually, a biometric identifier may be used (e.g. fingerprint or iris recognition).
- A 'legitimate relationship' with the patient - i.e. they must be one of the team providing care to that patient.
- A role which allows them access to clinical information (e.g. a nurse rather than a receptionist).

There will also be an audit trail, showing who has seen or amended each patient's information. Nevertheless, some clinicians have expressed concern that a stringent security regime will need to be implemented carefully, if it is not to discourage doctors from using the system.

Consent
All patients will have an NHS Care Record, but will decide whether or not it can be shared to provide them with care. There are two models for obtaining consent:
- opt-in: patient information is shared only if the patient gives express consent;
- opt-out: patient information can be shared, unless the patient specifically denies consent.

Some groups, such as the National Consumer Council, argue that opt-in is the ideal approach as it requires

patients actively to give their consent to data sharing. However, opt-in is more expensive and difficult to implement than opt-out. Experience with the introduction of electronic records in Alberta, Canada, showed that clinicians saw 30% fewer patients, in part due to the time needed to obtain explicit consent to share records, while only 1% refused consent.

After taking advice from its public and clinical advisory boards, the national programme has decided on an approach where patients will have a period to consider before their NHS Care Record can be shared. During this time, local and national initiatives will inform the public about sharing of their clinical data electronically and their options. After this period, unless they have opted out, patients' NHS Care Records will be shared electronically when they need care. They can, however, still opt-out of their record being shared at any time. The national programme is currently looking into options for storing information on the Care Record that patients might wish to keep private, such as a teenage pregnancy.

As each NHS Care Record will be identified with a personal NHS number, some groups have expressed concern over potential future links with a national ID card. It will be important for the national programme to specify explicitly whether and when external bodies will be able to see the NHS Care Records. The NHS is shortly due to publish a National Charter for sharing information. However, there is the potential for disputes over the content and sharing of records, and some stakeholders have suggested that an NHS 'Information Ombudsman' should be set up to deal with complaints.

Overview
- The national programme for IT aims to ensure clinicians and patients have the right information to make health decisions, by providing modern IT systems and setting national standards.
- While national funding for IT has been ring-fenced, local funding to make it work in practice may vary.
- Clinicians, patients and other stakeholders will need to be heavily involved in implementing the programme if it is to meet their needs and be widely used.
- Key issues are security, quality and confidentiality of patient information in electronic health records.

Endnotes
1 Health is a devolved matter and the NHS in Scotland, Wales and Northern Ireland have separate IT schemes that are beyond the scope of this note.
2 This excludes internal spend, such as in-house NHS IT staff.
3 Which brings together all the UK's NHS organisations.
4 *NAO/OGC Common Causes of Project Failure*, 2002
5 British Journal of Healthcare Computing, Autumn Forum 2002
6 *Right Data, Right Place , Right Time – Joined-up Medical Records?* EURIM, Jan 2003

www.parliament.uk/post