



Connecting for Health



**A guide to the
National Programme for
Information Technology**

Delivering better **care**

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The National Programme for IT represents a great deal for NHS patients and staff.

It will enable the delivery of better care to patients by staff equipped with the latest information at their fingertips.

Gone will be the days of lost medical records, inconvenient appointments, and repeated journeys to hospital.

Gone will be the endless paperchase between GP surgeries and hospitals as appointments are made and re-made and test results chased up and re-ordered.

The new era dawning for the NHS involves modern, sophisticated IT which will provide

solutions to the problems that have dogged the NHS for years.

In tandem with other programmes, a much more patient-centred NHS will emerge, able to deliver on patients' needs at times and places to suit them.

This is an exciting time for the NHS, its patients and its staff. It's an opportunity not to be missed: to increase the efficiency, effectiveness and job satisfaction of staff who will be able to deliver higher quality, more timely, more convenient care to thousands of patients every day of the year.

The vision

Jayne Jones has a hip problem and goes to her GP because it seems to be getting worse.

He sends her for an x-ray at her local hospital where a new system means the resulting images of her hip are stored on computer rather than on film. The hospital sends the images and a report electronically to her GP for him to review, rather than him having to wait for information to arrive in the post.

At a second appointment with her GP, Jayne, 70, agrees to try a new medication. She then goes to stay with her daughter 50 miles away. She's happy to make the trip, safe in the knowledge that, should she fall ill, local doctors will have all the information they need about her health, because she now has an electronic NHS Care Record which can be shared between clinicians.

This medical record will include details of the latest medication

she has been prescribed should she need a repeat prescription.

Back home, Jayne returns to her GP as her hip does not seem to be improving. They decide she needs to see a consultant. Sitting in her GP's surgery, Jayne is able to choose an appointment at her local hospital at a date and time to suit her. She books the appointment there and then using the electronic link-up between the surgery, the booking management service and the local hospital.

At her appointment in the hospital's outpatients' clinic, the consultant she sees has accurate, up-to-date information about her tests and x-rays at his fingertips as a result of the new electronic system. He is able to check her medical notes using secure access to computer records and make the necessary arrangements for an operation, which will hopefully improve her condition.



Factfile

In 2003-2004:

- there were 300 million consultations in primary care
- almost 13.5 million people attended a first outpatient appointment with a consultant
- there were over 9.4 million GP referrals made to outpatients
- over 15.3 million people attended A&E and there were over 4.2 million emergency admissions
- over 5.4 million people were admitted to hospital for planned treatment
- over 668 million prescription items were dispensed in the community at a cost of over £7.8 billion
- there were over 6.4 million calls to NHS Direct and over 6.5 million visits to NHS Direct Online

Hundreds of thousands of patients will begin to experience more efficient and effective care over the next few years as interaction with the NHS becomes easier and more convenient.

Importantly, they will be able to take more control of their health and treatment, with information to make choices more readily available. In time, patients will also be able to view their own NHS Care Record, using secure Internet access into the NHS system.

The wide ranging improvements will be delivered by modern IT systems, operated by frontline staff keen to deliver even better, quality care to their patients. At the same time, the new, improved IT has the capacity to make working lives easier.

The NHS Care Records Service will give authorised staff ready access to up-to-date, accurate patient information, making diagnosis and treatment safer and faster. They will no longer have to chase missing files, scans and x-rays, saving precious time for themselves and their patients.

Electronic care records will also reduce form-filling for patients and staff alike, and basic information will not have to be repeatedly recorded every time a patient enters the NHS system.

Choose and Book will enable patients to fit hospital appointments

around their lives, choosing a time, date and place convenient to them.

They will no longer attend appointments and find their time is wasted because of missing notes or test results. Consultants will find that fewer people fail to turn up because appointments have been made at inappropriate times.

For the first time, linked computer systems will enable health information and records to be transferred between NHS organisations efficiently, securely and confidentially. This will be hugely beneficial where specialist opinions are required: scans and other patient information can be viewed in different locations at the same time.

This will mean that patients moving

between GP surgeries and hospitals in a local health community will be supported by a seamless transfer of information giving details of the care they have received. GPs will know exactly where their patients have been treated, by whom, what the outcomes were and whether follow up is needed.

Once installed, the new IT infrastructure and systems will connect more than 100,000 doctors, 380,000 nurses and 50,000 other healthcare professionals; benefiting more than 50 million patients in England.

The potential benefits from this new IT are enormous. It is an essential part of the modernisation of the NHS and will improve the working lives of staff and centre care firmly around the needs of its patients.

The IT

The new IT infrastructure will link many different computer systems across the NHS in England and deliver:

- the NHS Care Records Service (NHS CRS)
- Choose and Book, an electronic booking service
- a system for the Electronic Transmission of Prescriptions (ETP)
- a new national broadband IT network for the NHS (N3)
- Picture Archiving and Communications Systems (PACS)
- IT supporting GP payments, including the Quality Management and Analysis System (QMAS)
- Contact – a central email and directory service for the NHS.



Patients

Patient care will be transformed when all patients in England have an electronic care record which can be shared safely within the NHS and viewed, in summary form, by patients themselves.

The new technology will not only provide easier access to clinical information, but better support for diagnosis and treatment and improved communication between different groups of health professionals. These will all enhance patient care.

If a GP decides with their patient that a referral is appropriate, the ability to 'Choose and Book' where and, more particularly, when they are treated will allow patients to plan around their work, family and carer commitments. This will also spare patients an anxious wait for an appointment and result in fewer appointments being missed.

Patients can also expect the right information about them to be available to the right clinician at the right time. Electronic records, results and scans are less likely to be misplaced and the new technology will enable test results to be communicated much more quickly – again, reducing the wait for patients.

In addition, patients will no longer have to complete forms whenever they come into contact with a different part of the NHS and clinicians will be freed from repetitive administrative tasks enabling them to spend more time with patients.

Electronic Transmission of Prescriptions (ETP) will bring benefits for patients, especially the large numbers of people who require repeat prescriptions. In future, patients will not always have to visit their GP surgery to collect a repeat prescription, but can have it sent electronically to a nominated pharmacy. ETP will also improve safety by ensuring that each patient's medication record is automatically updated.

New technology being introduced by the National Programme will also fulfil patients' expressed wish to become involved in, and more informed about, their care, through readily available information about health services, particular conditions and their own specific care regimes.

Patients will eventually be able to access their own electronic health record via a secure Internet link into the NHS. They will be able to check their record for accuracy and, in time, will be able to add their treatment preferences and information about their needs, such as wheelchair access requirements.

Patients will have their own personal online health organiser, HealthSpace. This will act as a calendar, allowing them to record appointment details and set up reminders. It will also enable them to keep a record of their blood pressure, weight and height. It will store self-care programmes on, for example, stopping smoking or managing diabetes. HealthSpace will incorporate a search feature, allowing patients to look for up-to-date, reliable health-related information, and offer guidance and information on healthy lifestyles.

Factfile

- Greater patient involvement in decisions about their care and greater access to, and ownership of, their records.
- Complete health record available 24 hours a day, seven days a week, wherever a patient requires care.
- Support for multi-disciplinary care team working.
- Greater support for clinical decision making.
- More efficient and appropriate referrals and communication of test results and discharge summaries between, for example, GPs and hospitals.

The NHS



family



Allied Health Professionals

The biggest benefit to allied health professionals from new IT is access to a patient's health information, wherever and whenever it is required. This will mean that radiographers, physiotherapists, pharmacists, speech therapists or any other allied health professionals will be able to make speedier and more informed decisions.

Information only has to be entered once which reduces the time people need to spend completing forms and builds up a holistic picture of the patient's history, care and requirements. This means that everyone involved in the care of that patient will be better informed about their condition.

The new system will also support multi-disciplinary care team working. For example, different people in different places involved in a patient's care could simultaneously pull up a radiology image or a written record, for a virtual consultation. This is a major improvement on previous systems, where notes or x-rays or the drugs chart could be unavailable in a different part of the building or at another NHS location.

The new IT will offer clear and legible requests for services, and requests will be based on defined protocols, ensuring that pre-test preparations have been carried out and that tests are appropriate to the patient and their condition, therefore reducing inappropriate ordering. Electronically transmitted referrals will also be more legible and complete.

Choose and Book will ensure treatment happens in a logical progression, avoiding the situation where a patient may end up with three different appointments which may clash or necessitate three separate hospital visits.

A raft of very useful clinical decision support tools and protocols will also be available when the new systems are in place. E-prescribing for example, will mean guidance is available to ensure that the most appropriate medication routes are used and there are drug alerts to warn of contra-indications between drugs.

Other important information will also be more readily available. Currently, in a case of poisoning it would be necessary to telephone a poison hotline at a major hospital for guidance on treatment. When the new IT is in place, users will be able to click straight on to a 'poison index' for information. In addition, the British National Formulary will be available online. Easier online access to information like this will help allied health professionals to make speedier and informed decisions on patient care.

GPs

Benefits for GPs from the National Programme will include complete patient data, greater support for clinical decision making and improved communication between carers.

A shared patient record will provide a complete view of the patient and their clinical requirements whenever and wherever it is needed, at the point of care.

This will improve transfers and handovers of care, including when patients move between GP surgeries, in the event of out of hours care or following A&E admissions.

Patient information will be accurate, timely and fed directly into the GP's system. This will include automatic updates whenever medication is prescribed and dispensed, so that GPs will always be able to find out exactly which medications have been prescribed.

GPs will also be able to schedule activities; book outpatient appointments and automatically manage follow-up appointments and routine screening.

The new Choose and Book system will streamline the booking of hospital appointments for patients. GPs will generate a unique booking reference for patients which will take about a minute. Patients then either go home and book a convenient appointment, or one of the practice staff will help them in the surgery itself. The system is far more efficient and flexible than the traditional process, which can be time-consuming and frustrating for GPs and patients alike.

The ability to request tests and access test results electronically, plus the support for clinical decision making that the new systems will offer, will also be useful for GPs. For example, National Institute of Clinical Excellence clinical recommendations and national service frameworks will be available online, as will consistent, accurate and timely clinical data from all clinical disciplines. Support with prescribing ensures that GPs will use the most appropriate medication routines. Online guidance and procedures for referring patients and ordering clinical investigations will also be available, along with up to date, accurate and accredited protocols of care, procedures and clinical guidance.



The NHS family

Factfile

- Immediate treatment can be given in an emergency as the patient's medical record is known.
- Reduced administration and less duplication of record keeping.
- Complete picture of which care professionals have been involved in a patient's treatment.
- Increased safety in prescribing, monitoring prescriptions, and warning about possible conflicts in treatment.
- Better quality information to support research and clinical audits.

Medical secretaries

The National Programme for IT will benefit medical secretaries and records staff as data needs to be entered only once, rather than each time the patient comes into contact with the NHS. This will save time and improve the accuracy and consistency of patient records.

The new systems will streamline administration and make it easier to prepare reports. Locating patients' records and x-rays, retrieving investigation reports, finding information for discharge letters and creating and modifying clinic and operating lists will all be simpler. Patient records will also always be complete and up to date.

The biggest tangible benefit to medical secretaries' working lives however will be an end to the large quantities of written notes and

documents which have to be dealt with every day and which mean endless manual filing and huge storage problems in NHS organisations.

Medical secretaries will also benefit from a common 'look and feel' to the new computer systems, making them easier to use and reducing the amount of training needed. This will benefit secretaries who move jobs within a particular NHS organisation or to another NHS location.

The new IT should also speed up test results so medical secretaries have to make and take fewer calls chasing results for patients. The British Society of Medical Secretaries highlights how the new systems will be common to hospitals and aid communication between them and GP surgeries.

Nurses

Both hospital and community nurses will have more time to focus on caring for patients and will be able to improve their clinical decision making through the new systems to be introduced by the National Programme for IT.

The time spent on routine administration will be reduced across hospital wards, clinics and operating theatres, as nurses will have access to patients' results and records electronically, at the touch of a button, rather than having to chase information from different departments.

Improved communication between departments and other carers will ensure that essential patient information is shared effectively and management information, captured electronically, will reduce the time spent filling in forms.

Nurses' clinical decision making will be improved by up to date, accurate and accredited protocols of care, procedures and clinical guidance, and by access to information from other carers about their activities and their observations of patients. The system will also provide support when prescribing, helping nurses to select the most appropriate medications.

One of the biggest differences to the working lives of nurses – and the experience of patients – will be the ability to access a secure NHS system, in real time, at the point of contact with the patient. Instead of chasing up test results or updates from doctors or allied health professionals in different departments, nurses will have all the information they need at their fingertips.


This overriding benefit will feed through into better bed management, speeding up both admissions and

discharges and allowing more patients to be treated.

The clinical advantages are tremendous for nurses. A nurse's ability to access evidence-based information to support their plan of care for patients, supported by relevant clinical guidelines and protocols, will help deliver better patient care and improve patient safety.

The systems will also support expanded nursing practice, community and mental health nursing and enable a joined up patient pathway where information will be available across care settings and across professional and care groups.





"The new IT should speed up test results so medical secretaries have to make and take less calls chasing results for patients"

Consultants

The benefits from the National Programme for IT will be wide ranging for consultants and their teams.

Referral information will be appropriate, clear, accurate and complete, because GPs will be able to book hospital appointments electronically using online guidance to support them in the referral process.

Patients will be able to choose their own appointment time and date, within predetermined limits, so the number of missed outpatient appointments will be reduced.

The ability for any authorised medical professional to access a patient's clinical history at the click of a mouse, anywhere and at any time, will be a vital step towards creating a comprehensive patient-centred NHS.

The National Programme will also support the move towards integrated care pathways. Better access to information and knowledge through online support systems and libraries will enhance care, for example, through safer prescribing and monitoring of drugs, which will reduce the potential for adverse incidents. Advanced decision support will also reduce delays in discharge.

Paperwork has grown dramatically over the past

20 years so consultants and their teams now spend considerable time completing, retrieving and reading paper records. With multiple paper files for each patient, vital pieces of information can be overlooked. Electronic records will address these problems. Relevant information will be available to authorised NHS staff whenever and wherever it is needed.

This facility will become more important with the reduction in the working hours of junior doctors, because a patient will be cared for by a team of doctors. Electronic shared records will enhance communication and continuity of care.

For example, if a consultant is on call over a weekend and is telephoned for advice, the consultant and the person telephoning for advice will both have secure access to the patient's record to make an informed decision.

The shared record will also enable doctors working in different hospitals to access and discuss an individual patient's care with ease, for example in the care of an injured patient needing to be transferred from a remote hospital.

An added value of data being stored electronically is that information will be readily accessible for clinical audit and governance processes.



Vision to reality

The Spine

Key to providing an electronic NHS Care Record for every patient, securely accessible by healthcare professionals at any NHS location in England, is the creation of a core data storage and messaging system, known as the Spine.

The Spine will:

- store personal characteristics of patients, such as demographic information
- store summarised clinical information which may be important for the patient's future treatment and care, such as allergies, visits to A&E and adverse reactions to drugs
- provide the security systems required to restrict access to the national and local systems
- provide a secondary uses service, using anonymised data to provide business reports and statistics for research, planning and public health delivery
- bind together all the local IT systems within the National Programme.

The Spine promises to transform the way health and care information is managed and will support other parts of the National Programme including Choose and Book and Electronic Transmission of Prescriptions (ETP).

► www.npfit.nhs.uk/programmes/nhsgrs/spine

NHS Care Records Service (NHS CRS)



The NHS Care Records Service will be the lynchpin of the new systems and services. Every patient's medical records will be held electronically. Health information will be safely and easily accessible to healthcare professionals and patients, whenever and wherever it is needed.

Currently, health information is held as a mixture of paper and computer records that cannot easily be shared. Even records held electronically are effectively locked away, because computers in different NHS buildings or locations are not linked.

The NHS Care Records Service will change this. It will create an electronic NHS Care Record for each of England's 50 million patients. This will, for the first time, enable information to be shared safely and securely across the NHS and provide a nationally available record of a patient's care.

As an individual is likely to be treated by a variety of care professionals in a range of locations throughout their life, the NHS Care Record is a means of ensuring that essential details of care and treatment are readily available via an easily accessible, electronic record.

Full records will remain locally where care is delivered. From these local records, essential information will be automatically 'uploaded' to a summary record. The summary record will have an individual's personal details, such as address, date of birth and NHS number, together with important care information such as whether a patient is diabetic or has a drug allergy.

Over time each person's NHS Care Record will build into a comprehensive patient history with a summary of contact with all care providers. The summary record will show where more detailed information is stored locally and will also record an individual's consent for care professionals to view their health information.

► www.npfit.nhs.uk/programmes/nhsgrs

HealthSpace

HealthSpace is an online personal health organiser, additional to and separate from the NHS Care Records Service.

It offers people a secure place on the Internet to store personal health information like height, weight, blood group, allergies, medications and food preferences that they may wish health professionals to know. HealthSpace also has a calendar function and patients can register to receive email reminders about appointments.

Eventually, HealthSpace will be linked to wider NHS IT systems and will offer patients the ability to view their NHS Care Record securely online. It will also be possible for patients to choose to share information in their HealthSpace with the healthcare professionals treating them, complementing the information in their NHS Care Record.

HealthSpace will also provide people with access to other new NHS IT services when they become available including Choose and Book and Electronic Transmission of Prescriptions.

► www.healthspace.nhs.uk

Secondary Uses Service (SUS)

Part of the NHS CRS, the SUS will protect patient confidentiality and will provide timely, anonymous patient data and information for purposes other than direct clinical care, including:

- counting the number of cases of diseases and looking at public health trends
- analysing how safe and effective a treatment is, for example, flu vaccinations
- checking that the NHS is providing a good service
- planning how many beds, wards and staff are needed
- training students and staff.

► www.npfit.nhs.uk/programmes/sus



The National Programme for IT in the NHS is working hand in hand with NHS staff and suppliers to introduce a number of key programmes by 2010.

Electronic Transmission of Prescriptions (ETP)

ETP will allow prescriptions generated by GPs to be transferred electronically from their surgeries to their local pharmacies, improving patient information, saving patients time and giving them more choice in their healthcare.

GPs and other prescribers in primary care will send an electronic prescription to the medication spine, part of the NHS Care Records Service (NHS CRS), to make it available for dispensing. At the same time, the prescribed medication details are added to the patient's electronic record held by the NHS CRS.

If a patient nominates a pharmacy from which to receive their medication, the electronic prescription is sent straight to that pharmacy for collection or delivery. If a pharmacy has not been nominated, the patient is given an ePrescription to present at a pharmacy. This has a barcode which enables the community pharmacist to obtain details of the prescription from the NHS CRS.

Once fully dispensed, the community pharmacist sends an electronic reimbursement request to the medication spine before it is routed to the reimbursement agency.

ETP will reduce administration as prescription information will only need to be keyed in once.

Healthcare professionals, subject to consultation in the case of community pharmacists, will have access to better information about a patient's medication record at the point of prescribing and dispensing.

Specific benefits include improvements in the system of repeat prescriptions – patients will no longer have to attend their GP surgery to order and collect their repeat prescriptions, and services such as home delivery of medicines will be extended.

Patient safety will be significantly improved with a reduction in prescription errors. By viewing medication history, adverse drug reactions or missing information can be checked and the most suitable treatment administered.

Millions of prescription items are issued each year and the number is growing at an annual rate of six per cent. ETP will support this increased volume, while at the same time improving the working lives of GPs and community pharmacists and giving patients greater choice, convenience and control in their own healthcare.

In addition, ETP will integrate with the electronic prescribing programme – a decision-support system to help prescribers in a range of care settings.

► www.npfit.nhs.uk/programmes/etp



Choose and Book

GPs and other primary care staff will be able to book initial hospital appointments, at a convenient date, time and place for patients, through the Choose and Book electronic booking service.

When a patient needs to be referred to a consultant or other healthcare practitioner, their GP will ask where and when he or she wants the treatment to take place, discussing the available options.

The appointment will be booked on the spot and the patient will leave the surgery with an appointment time and date. Or, if preferred, patients can book an appointment later using an online or telephone service. This will suit those who need to consult with family, carers or colleagues before arranging a date.

Choose and Book completely changes the way the paper-based referral system currently works. It removes the uncertainty, stress and potentially lengthy wait for patients between visiting a GP and receiving

an appointment from a hospital. It provides greater opportunity for patients to influence the way they are treated by the NHS and, by providing a choice over when and where they will receive treatment, a patient's experience of the NHS will be improved.

Clinicians and NHS staff will also see real benefits. GPs and practice staff will have greater access to their patients' care management plans, ensuring that the correct appointments are made. Choose and Book will also reduce the amount of time spent on the paper chase and bureaucracy associated with the paper-based referral process.

In addition, consultants and booking staff will see a reduction in the administrative burden of chasing hospital appointments on behalf of patients and the number of 'did not attends' will reduce because patients will choose their appointment.

► www.npfit.nhs.uk/programmes/booking





N3 – The National Network

N3 – the new national network for the NHS – will provide reliable supporting IT infrastructure, world class networking services and sufficient, secure connectivity and broadband capacity to meet current and future NHS IT needs. It will support all the other initiatives within the National Programme.

N3 will replace NHSnet, the current private NHS communications network, providing a reliable service at every site where NHS services are delivered or managed.

It is vital to the delivery of other National

Programme initiatives, which all require bandwidth in excess of that provided by NHSnet. The new network will provide the essential technical infrastructure through which the benefits to patients and staff from the National Programme's initiatives will be fully realised.

It will, for example, speed up the delivery of medical images. A chest x-ray used to have to be delivered by taxi, which could take hours. Using a standard telephone line the x-ray took half an hour to transmit. NHSnet

reduced this time to approximately four minutes. With N3, sending an x-ray via a typical link to a GP surgery should take less than one minute, whilst a user at a main trust location should receive the image in around 15 seconds.

The new, high speed N3 network will make it possible to deliver reforms and services like this which are needed to improve patient care and bring benefits for patients, clinicians and the NHS.

► www.npfit.nhs.uk/programmes/n3

Picture Archiving and Communications Systems (PACS)

New systems will make film-based x-rays and scans a thing of the past. Digital medical images will support improvements to the patient's NHS journey.

For the past 100 years, film has been used to capture, store and display radiographic images. The implementation of PACS computer technology will allow for a near filmless operation.

Picture Archiving and Communications Systems capture, store, distribute and display static or moving digital images such as electronic x-rays or scans, for more

efficient diagnosis and treatment. PACS takes away any need to print on film and to file or distribute images manually.

The images can be sent and viewed at one, or across several NHS locations. This will enable clinicians and care teams working together to view common information and so will speed up diagnosis. The capacity of diagnostic services will increase with PACS as both test results and diagnoses will be available more quickly. Images will be available 24 hours a day, seven days a week and can be manipulated

to enhance viewing and diagnosis. Fewer appointments and operations will be postponed because of non-availability of x-rays. There will also be a reduction in the number of re-tests required due to lost film or inconclusive images. This will, in turn, reduce patients' exposure to radiation.

Easier access to images and test results will also bring quicker discharge from hospital and better care planning.

Digital images will form an essential part of every patient's NHS Care Record.

► www.npfit.nhs.uk/programmes/pacs



Contact – Email and Directory service

Contact is a centrally managed, secure, clinical email and directory service provided free of charge to NHS organisations in England.

At present there are many, different local email systems operating in the NHS, varying substantially in quality and reliability. None of these services are secure enough to allow patient information to be transmitted.

Contact has been developed by the NHS with Cable and Wireless specifically to meet the British Medical Association's requirements for secure clinical email between NHS organisations.

It offers all NHS staff an email address for the lifetime of their work with the service, no matter where they work or move to within the NHS. Emails are automatically encrypted when they are sent and calendars and folders can be shared with other users across the NHS.

Contact also provides a national directory of people in the NHS, giving their name, email addresses, telephone numbers, name and address of their NHS organisation, and information about departments, job roles and specialities.

Contact is accessible via NHSnet and, subsequently, N3, as well as the Internet, which will be particularly useful for staff who work from more than one location or in the community.

Service levels for Contact are guaranteed, meaning that staff can be confident in the availability of the service and in the delivery times for messages.

► www.npfit.nhs.uk/programmes/contactmail



IT supporting GP payments – QMAS

The Quality Management and Analysis System (QMAS) is a web-based tool that provides 9,000 GP practices across 303 Primary Care Trusts with evidence and feedback on their quality of patient care.

The new General Medical Services contract for GPs, introduced in April 2004, meant a special payment system was needed to support the contract's Quality and Outcomes Framework, which financially rewards GP practices for the quality of care they deliver.

With the introduction of QMAS, data is submitted by GP practices and verified by the system. QMAS forms up to 30 per cent of new money for individual practices and 100 per cent of practices are now using the system.

Individual patient data is not submitted to QMAS thus protecting patient confidentiality.

QMAS enables GP practices to analyse the data they collect about the number of services and the quality of care they deliver in eleven disease areas across a range of organisational areas. This includes an annual patient survey. It will benefit both patients and the NHS, for example PCTs should see fewer avoidable hospital admissions through improved chronic disease management.

► www.npfit.nhs.uk/programmes/qmas

Bringing in the IT



The implementation process

The NHS is an enormous community requiring services and support which will be greatly enhanced with the introduction of new IT infrastructure, systems and services by the National Programme for IT. The technology will effectively link the many disparate NHS organisations to create a truly national health service.

However, implementing the National Programme is a huge and complex operation. As such, there will be no 'big

bang'; instead, systems and services will be gradually phased in across England over the next six years, according to priorities and when NHS organisations are ready to implement them.

The Programme will be implemented locally by the trusts that form a local health community. It will be planned and coordinated at strategic health authority and cluster level, with guidance and support offered by the central Programme

teams, including national applications, plans and contracts (see page 13).

As with all major projects there will be difficulties to deal with along the way. To be successful, implementation must be collaborative and will draw on the skills and resources of staff at all levels of the NHS, as well as the contracted national and existing systems suppliers who are providing a range of products and services to the National Programme.

Guidance

To ensure that this vast logistical exercise runs as smoothly as possible, the National Programme is providing both practical support and written guidance.

A key document is The National Programme Implementation Guide – designed for the NHS by the NHS. The guide has been produced with considerable input from NHS frontline contributors and covers how the implementation of the National Programme will change work patterns, healthcare practice, staffing and training requirements, as well as future planning in all areas of administration and management.

It provides an overview of how the National Programme will be implemented and advice on the activities that local health communities should undertake to ensure that each organisation is ready and able to gain maximum benefit from the introduction of the new systems.

The guide also provides information on how to obtain practical help from the National Programme and will be regularly updated, based on lessons learned, as products and services are rolled out.

The guide is available via

► www.npfit.nhs.uk/implementation and includes links to other reference materials.

Getting the best from the National Programme – benefits management

The purpose of benefits management is to ensure that the potential value from the National Programme for IT is actually realised and that the National Programme is able to demonstrate that this is the case.

The 'value' of the National Programme is the range of benefits from the new systems that will be available to the NHS and its patients. These benefits range from the convenience to patients of having a choice of consultant, location and time of treatment to efficiency gains for primary and secondary clinicians and their staff.

Delivering benefits to staff and patients will contribute to achieving NHS performance improvement goals against the 'Standards for

Better Health', National Standards Frameworks and other service improvement initiatives.

The installation of the IT will be accompanied by significant changes to existing ways of working. With this in mind, the implementation phases of the National Programme should be taken as an opportunity to undertake IT-enabled service improvement.

The aim of embedding the practices of benefits management into the National Programme's deployment is to support the delivery and monitoring of the planned benefits, report on them and provide feedback for learning and control.

For more information please contact
► benefitsmanagement@npfit.nhs.uk

Who does what?

Department of Health (DH) – the National Programme for IT's sponsor. The DH's departmental management board is also the top level of governance for the National Programme. In the document, 'Delivering 21st Century IT Support for the NHS', the DH set out the overarching strategy for the National Programme for IT (see page 18).

NHS Connecting for Health – the agency delivering the National Programme for IT.

National Programme for IT – responsible for delivering a modern, integrated IT infrastructure and systems for all NHS organisations in England by 2010. The central National Programme team manages national procurements, oversees the development of IT systems and services to set information standards and within a set architecture, and coordinates implementation activities.

National Application Service Providers (NASPs) – responsible for services that are common to all users, for example Choose and Book and the national elements of the NHS Care Records Service that support the summary patient record and ensure patient confidentiality and information security.

National Infrastructure Service Provider – responsible for providing networking and support services for the NHS. It will ensure that existing and new systems and services run smoothly and quickly.

Clusters – each cluster comprises five, six or seven strategic health authorities (SHAs) who work together to take forward the procurement and implementation of National Programme services at local level.

Each cluster has a senior responsible owner and a regional implementation director who between them oversee implementation and ensure benefits are achieved.



Local Service Providers (LSPs) – each cluster has a LSP, responsible for delivering services at a local level and supporting local organisations in delivering the benefits from these services. The LSP will ensure the integration of existing local systems and, where necessary, will implement new systems to ensure that the national applications can be delivered locally, while maintaining common standards.

Strategic health authorities, NHS trusts, primary care trusts (PCTs) and primary care organisations – SHAs, working with NHS trusts, PCTs and primary care organisations

in their area, are responsible for co-ordinating mainstream investment and modernisation activities to deliver benefits from the National Programme to patients, staff and the NHS.

SHAs and local NHS organisations are working with their cluster teams to develop local implementation plans including prioritisation and timing of system replacements or upgrades and to align local IT strategies with the National Programme.

Local responsibility also includes cleansing and preparing historical data for loading onto the new systems and managing the overall change process including clinical engagement and training.

Achievements to date

NHS Connecting for Health has:

- run one of the largest, fastest, and one of the most complex public procurement exercises ever undertaken
- established an excellent team based in Leeds. This team is working in partnership with thousands of people across the NHS and with suppliers
- delivered the first suite of systems for use across the NHS
- been recognised as pioneers worldwide and a model for other countries to follow.

Some highlights of progress:

- first electronic prescriptions issued in February 2005
- go live of first nationally indexed Picture Archiving and Communications Systems (PACS) in early 2005
- fast reliable broadband access provided for over 400,000 NHS staff, including N3 connections for over 50,000 primary care personnel
- over 124,000 users registered with the Contact email and directory service

- QMAS has over 20,000 users across 8,800 practices and, over the past financial year, has facilitated payments of £1.2 billion to practices participating in the Quality and Outcomes Framework
- over 70,000 users are now registered to use NHS Connecting for Health systems and services with a rate of registration of approximately 5,000 users a week
- by 1 June 2005 a total of sixteen patient administration systems had been deployed.

Programme partners

Much of the modernisation of the NHS depends on the delivery of excellent new IT systems and services, so it was necessary to ensure that the procurement process undertaken by the National Programme was completed as quickly as possible.

The procurement itself set new standards for the public sector, creating a

blueprint for others in the UK to follow. It also achieved major savings for the NHS on hardware and software.

Contracts worth over £6bn have been awarded to deliver the NHS Care Records Service, Choose and Book and N3. Suppliers are contracted to develop exclusive solutions for the NHS which are proven

to be safe, resilient and fully functional.

The scale and complexity of the National Programme requires different suppliers and different solutions to be integrated. Suppliers are now working in partnership with the National Programme and the NHS to achieve a successful implementation.

About the suppliers

Local Service Providers

A

CSC Alliance

LSP North West and West Midlands Cluster

The CSC Alliance comprises: Computer Sciences Corporation (CSC), iSoft, Hedra and SCC.

CSC is a leading provider of IT services and solutions to industries and governments worldwide. The CSC Alliance brings together capability and expertise in consulting, systems integration and managed services.

» www.cscalliance.com

B

Accenture

LSP North East and Eastern Clusters

Accenture is a global management consulting, technology services and outsourcing company. Committed to delivering innovation, Accenture has deep industry and business process expertise, broad global resources – 100,000 people in 48 countries – and a proven track record.

» www.accenture.com

C

The Fujitsu Alliance

LSP Southern Cluster

The Fujitsu Alliance is responsible for programme management across the cluster and at a local level. With expertise in HR and training, system integration and healthcare solutions, the Alliance will provide a service to trusts in the Southern Cluster.

» uk.fujitsu.com

D

Capital Care Alliance

LSP London

BT will design, deliver and operate integrated local patient record applications and systems for the whole of the London care community. It will work with a number of companies with world class experience in the development, deployment and operation of healthcare systems.

» www.btcapitalcarealliance.co.uk

National Application Service Providers

BT

NASP NHS CRS, NISP N3

BT is a national telecommunications and IT business with well-established links with the public sector, particularly the NHS. BT is the NASP for the NHS Care Records Service and is also developing N3.

» www.n3.nhs.uk

Atos Origin

NASP Choose & Book

A leading international information technology services company employing 45,000 people in 50 countries, Atos Origin is a global provider of business consulting, technology integration services and managed services. The company has participated in IT programmes at the heart of modernising health services around the world including, in the UK, Electronic Patient Records Systems, the NHS Strategic Tracing Service and NHSScotland.

» www.atosorigin.com

Cable & Wireless

Contact

Cable & Wireless is a leading international telecommunications company, with customers in 80 countries. Cable & Wireless has been working with the NHS both at the national level and with individual trusts for many years providing services such as NHSnet and a variety of voice data and IP services. It is currently delivering the NHS email and directory service known as Contact.

//Implementation

The National Programme is a huge undertaking. For implementation purposes, England has been broken down into five areas, known as clusters. The five clusters are made up of groups of strategic health authorities:



Leading the way

In April 2005, the National Programme for IT became part of an Agency of the Department of Health called NHS Connecting for Health. This followed the decision to reduce the number of NHS bodies that work at arm's length from the Department of Health, resulting in the release of an extra £500 million which can be spent on patient care. NHS Connecting for Health is delivering the National Programme and also takes on some functions of the NHS Information Authority which has been disbanded. The new Agency is based in Leeds.



John Bacon

Overall senior responsible owner; delivery director for Department of Health; chief operating officer for the NHS.

Chairs the National Programme's national programme board and is a member of the Department of Health's departmental management board, which reports to Sir Nigel Crisp, chief executive of the NHS. John is the Department's sponsor for NHS Connecting for Health, the agency delivering the National Programme for IT.



Richard Granger

Senior responsible owner for programme and systems delivery; director general for NHS IT; chief executive for

NHS Connecting for Health, the agency delivering the National Programme for IT. Appointed in September 2002, Richard has extensive experience of delivering IT systems in the public sector.



Gordon Hextall CB

Chief operating officer for NHS Connecting for Health, the agency delivering the National Programme for IT. Responsible for all

operational matters, Gordon chairs the National Programme's operational management team which monitors the National Programme's progress and manages and mitigates risks and issues. Gordon also chairs the national supplier board to ensure cooperation and collaboration between suppliers and encourage IT innovation.



Richard Jeavons

Senior responsible owner for service implementation. Responsible for engaging clinicians and NHS management in planning

and preparing for the National Programme and realising its benefits. Richard chairs the service implementation board and oversees the work of the seven national clinical leads.



Harry Cayton

Chair of the Care Record Development Board. National director for patients and the public. Works with ministers and officials on promoting a

patient-centred service and with the NHS to improve patient experience. Oversees the role of the CRDB which is to ensure NHS IT helps deliver better care and supports the priority of creating a patient-focused NHS.

National clinical leads



Heather Tierney-Moore OBE

Nurse lead. Sits on the Modernisation Board which advises on and oversees the implementation

of the NHS Plan. She is currently chief nurse for the Sheffield Teaching Hospitals NHS Foundation Trust.



Jan Dowsett

Allied health professional lead. Superintendent radiographer and clinical services manager with Southampton

University Hospitals NHS Trust.



Professor Mike Pringle

GP lead. Professor of General Practice at the University of Nottingham, where he also heads up the School of Community Health Services.



Barbara Stuttle CBE

Nurse lead. Director of integrated care and executive nurse at Castle Point and Rochford Primary Care Trust in

Essex. She has 30 years experience in community and primary care.



Dr Gillian Braunold

GP lead. Member of General Practitioner's Committee of the BMA for the past six years. In that capacity she

is on the GPC's IM&T subcommittee, the joint GP IT committee and is deputy chair of the BMA's IT committee.



Ian Scott

Hospital doctor lead. Medical director and director of information at the Ipswich Hospital NHS Trust and chairman of the East Suffolk National Programme Implementation Board.



Dr Simon Eccles

Hospital doctor lead. Chairman of the Junior Doctors Committee of the British Medical Association.



Regional implementation directors

The regional implementation directors lead the IT delivery in each cluster, managing the support teams and linking with suppliers. They work closely with strategic health authorities and chief information officers in their clusters to support the implementation of the National Programme at a local level. All the regional implementation directors have a proven track record in IT in the NHS.

Ian Cowles

Group director of implementation
Leads the implementation effort on behalf of the National Programme, ensuring that implementation is being effectively planned and carried out across national and cluster contracts and existing systems suppliers. Works with his team of RIDs.



Robin Arnold

Eastern Cluster RID
Former director of information management and technology (IM&T) for Hichingbrooke Health Care NHS Trust.



Martyn Forrest

London Cluster
Acting RID
Previously chief information officer for South Yorkshire.



Clare Pacey

North East Cluster
Acting RID
Registered nurse and previously regional informatics clinician at South Yorkshire Strategic Health Authority.



Paul Charnley

North West and West Midlands Cluster RID
Former chief information officer for Cheshire and Merseyside Strategic Health Authority.



John Willshire

Southern Cluster RID
Previously chief information officer for Thames Valley Strategic Health Authority.

Being accountable

Governance and accountability

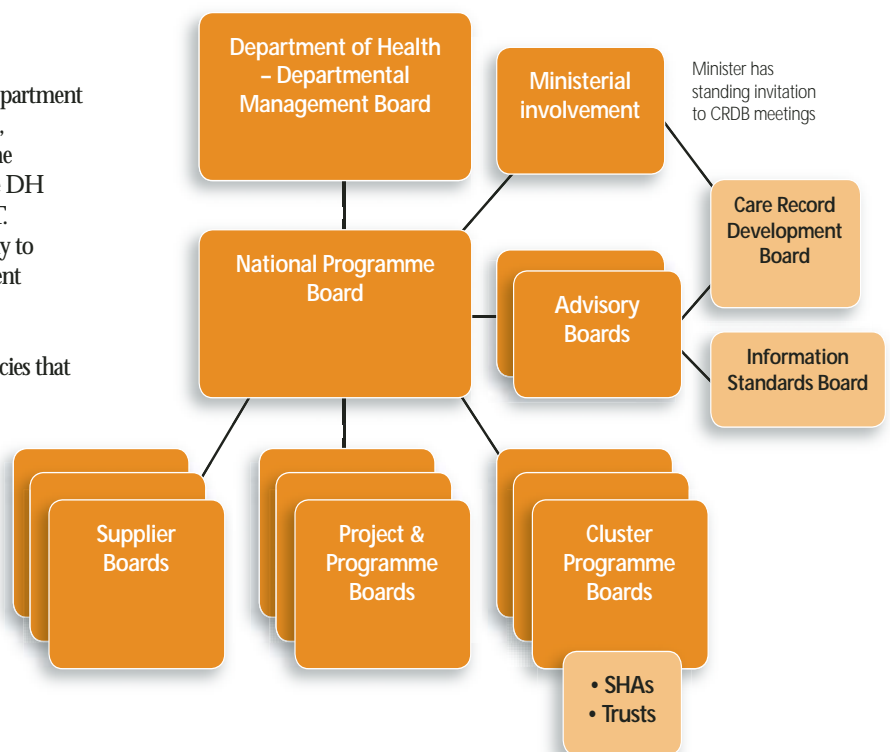
Governance and accountability for the National Programme operates at three levels with clear reporting lines and links to other groups.

The top level of governance is provided by the Department of Health departmental management board (DMB), which is chaired by the DH permanent secretary. The DMB is the senior decision making body within the DH and is the sponsor of the National Programme for IT.

Management of the National Programme on a day to day basis is carried out by the operational management team, chaired by the chief operating officer, who reports in to the National Programme Board.

Whilst not part of the National Programme, agencies that audit or review it also form part of the governance structure. These include HM Treasury, the National Audit Office and the Office of Government Commerce, all of which are represented on the National Programme Board.

The National Programme is also regularly reviewed by a cabinet office committee monitoring all government IT projects. The committee is chaired by the Chief Secretary to the Treasury.



Factfile

The Care Record Development Board aims to:

- ensure the technology can help create a consistent approach to personalised care
- improve the processes by which health and care is delivered
- improve people's knowledge about this delivery, including choice, control and transparency.

Care Record Development Board

The Care Record Development Board has been established to give clinicians, patients and the public the opportunity to have their say on the development of the National Programme for IT and the NHS Care Records Service.

The body will also ensure standards are maintained during the development and implementation of the National Programme.

The board brings together patients and the public as well as social and healthcare professionals and builds on the work of the previous Patient Advisory Board and National Clinical Advisory Board.

Chaired by Harry Cayton, the Department of Health's director for patients and the public, the board's main role is to identify the values, principles and processes of care, as well as the risks and difficulties with managing information. It will make sure these are

taken into account when IT systems are implemented. It also ensures ethical issues are adequately addressed and reports to the National Programme Board.

Much of the CRDB's work will be carried out by local and national action teams, made up of patient representatives, care providers, IT suppliers and specialists.

The teams will define best practice and integrate it into the National Programme's implementation process.

Their work will bring together existing national guidelines and standards. They will also examine a range of issues, including information standards, how data is transmitted, compliance with data protection, human rights and common law. Other areas of focus include electronic prescribing, the diabetes care pathway and the single assessment process for older people.

► www.npfit.nhs.uk/crdb



"The first level of governance is a range of boards with responsibility for particular areas of the National Programme, such as Choose and Book and PACS."

Ensuring con

Factfile

- Stringent and robust safeguards to protect the security and confidentiality of each patient's NHS Care Record.
- Access to a patient's record limited to those with a legitimate relationship to the patient.
- Rights to see clinical information dependent on role.
- Audit trail of access to each patient's record and alarms when access rules are breached.
- Patients able to have access to their NHS Care Record and able to see the information being shared.

The new NHS Care Records Service will provide health and social care professionals with an unprecedented amount of patient information.

Access to this information will be via electronic health records – one for every patient in England – available to clinicians whenever and wherever they are treating their patients.

The NHS CRS also provides patients with the opportunity to become greater partners in their healthcare. Eventually they will be able to view their summary NHS Care Record from home via a secure Internet link into the NHS.

As such, patients will want assurance that their information is stored and shared securely, to protect their confidentiality. Some patients will want to place additional restrictions on who sees parts of their record.

Strict and robust safeguards are being put in place to protect the security and confidentiality of every patient's care record.

Staff who will use the NHS CRS, such as medical secretaries, doctors, nurses, GPs, allied health professionals and pharmacists, will need to be authorised to ensure appropriate access to electronic records.

Access to the computer systems that host the electronic records will be controlled by smartcards with photographic ID and PIN. An individual's level of access to patient information will be determined by their role, their relationship with the patient and the patient's use of the information-sharing controls: see 'access controls' panel.

And, for the first time, there will be a trail left by those who access a care record showing when, where and by whom the record was viewed.

The NHS Care Records Service will provide much more protection and control for patients than is afforded by a largely paper-based medical records system.



Confidentiality

Access controls

Legitimate relationships

A care professional accessing a patient's information is required to have a 'legitimate relationship' with that patient, ie a direct clinical relationship. Systems will automatically construct a legitimate relationship when a patient is referred to another care professional.

In exceptional circumstances, care professionals will be able to create a legitimate relationship with a patient without referral or consent: for example, in the case of an accident and emergency clinician treating an unconscious patient. The

reason justifying the creation of this legitimate relationship must be recorded at the time.

Role-based access control

Care professionals will have access to only as much information as they need to know for the purpose of their job role. For example, an outpatients' receptionist, while requiring some patient information, is not likely to need detailed clinical information. The receptionist will not therefore have access to those functions that will display such information. Job roles will be defined centrally and assigned locally.

Sealed Envelopes

Patient's sealed envelope

Patients who do not wish those providing routine care to see specific information that they feel is sensitive can opt to store it in an electronic 'patient's sealed envelope'. If a care professional considers it necessary to see this information and is unable to get the patient's consent, then the care professional is required to 'break the seal'. This action can only be justified in specific circumstances and is audited and can be notified to the patient.

Clinician's sealed envelope

Occasionally, a care professional may feel that it is not in a patient's best interests to see certain information. There are two grounds for withholding information from a patient: that seeing it would cause the patient or someone else serious harm, or that it contains confidential information about a third party. In these circumstances, the care professional can place information into a 'clinician's sealed envelope', which may only be viewed by other clinicians.

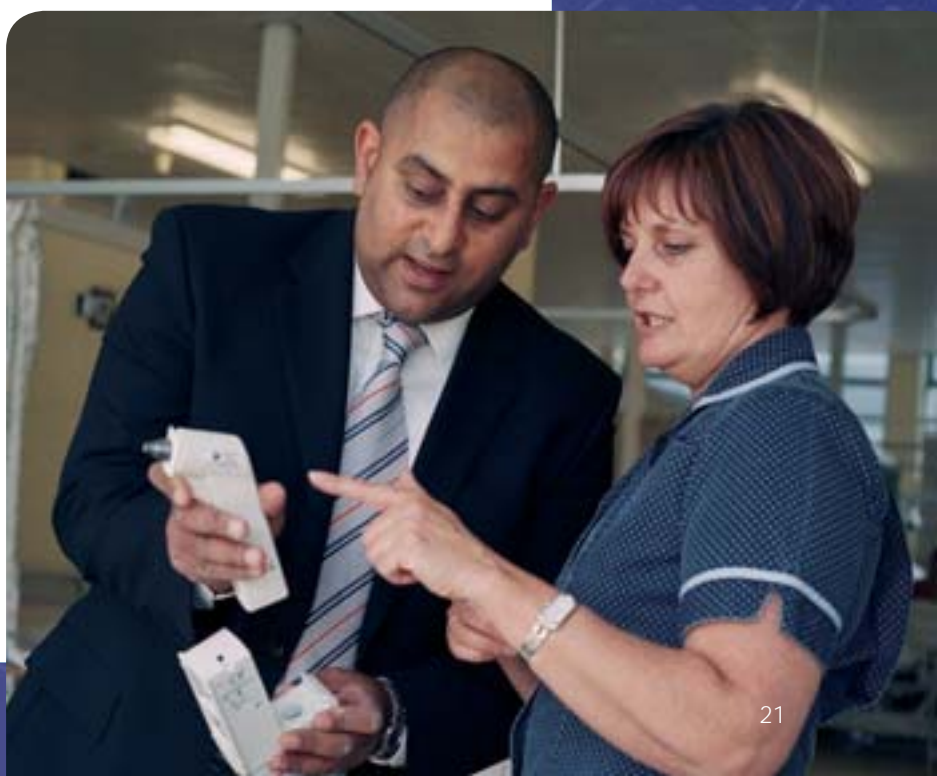
Information campaign

A nationwide campaign will be launched to inform both NHS staff and patients about the NHS Care Records Service.

The campaign will focus on preparing the NHS to help patients understand the changes being introduced and the benefits and risks of having an electronic health record. A second element will be directed at patients.

Patients will be informed about how their confidentiality is being protected and helped to make informed choices about any restrictions they want to put on their information being shared.

NHS staff will have access to a wide range of resources to help them inform their patients while the public element of the campaign will feature local awareness-raising activities and information leaflets, available in a number of languages and formats. The campaign will be phased in along with the roll out of the NHS CRS; it will be a series of local campaigns rather than one single national drive.



Training

A National Programme education training and development (ETD) structure has been put in place to ensure frontline NHS staff are equipped to use and understand the benefits of new IT systems and how they support other NHS Modernisation initiatives.

The National Programme's leadership, education, training and support (LETS) team serves as the central coordinating point in the structure and channels appropriate tools and resources through to NHS organisations.

The team's role is to support local ETD initiatives by providing core materials, tools and services to enable and support training and development agendas. It is liaising with National Programme colleagues who are developing materials specific to their areas to create a national menu of training products.

This menu will be filtered through ETD cluster leads, SHAs and local

health communities for members of staff with training roles to adapt and use in training their own teams.

As well as learning how to use the new IT systems, training for front line staff will have a strong focus on changes in working practices and how those changes will improve patient care and deliver staff benefits.

In addition, the ETD team will provide opportunities for clinicians and managers playing key roles in implementation to develop their understanding of the National Programme and begin to consider how the new technologies can be used locally to enable improvements to patient care.

Some computer skills will be pre-requisite to using the new systems. For frontline staff who want to prepare, the European Computer Driving Licence (ECDL) is available (www.ecdl.nhs.uk). The ECDL is an internationally-recognised

qualification adopted by the NHS as the referenced standard since November 2001. Around 100,000 NHS users are already registered, and a recent survey showed the ECDL can save some staff, like nurses, an average of more than 30 minutes a day.

Health Informatics (previously part of the NHS Information Authority) is also now part of LETS.

The health informatics programme will provide continuing support for people networks, building on the Health Informatics Community, which now has more than 12,000 registered users (www.informatics.nhs.uk).

It will continue to implement the national human resources strategy for health informatics specialists, 'Making Information Count' and support the modernisation of information and IT careers in healthcare.

Importantly, in 2005, it will refocus activity to launch an NHS Faculty of Health Informatics to support knowledge-sharing and learning and development for specialists and information users, based on the real experiences of systems developers, implementers, researchers and academics.

► www.npfit.nhs.uk/training

Funding

The National Programme for IT is committed to spending £6.2 billion over the 10-year lifetime of its projects.

This central expenditure is complemented by local baseline IT spending – already around £1bn a year in the NHS as a whole and which will be available to support local implementation of the National Programme.

The IT spend by the NHS is from a total budget which is increasing year on year to over £90 billion. Trusts are expected to increase their spending on IT in line with the 2002 Wanless report which recommended that they should be devoting four per cent of their budgets to IT by 2008. This covers not just the National Programme but other areas such as payroll, finance and HR systems.

In addition, health secretary John Reid announced in January 2005 a £95 million scheme which will reward primary care trusts which offer patients a

choice of hospital treatment through the electronic Choose and Book system.

By any measure, and over any timescale, the cost of the National Programme represents only a small, though a vitally important, fraction of the Government's investment in the NHS.

In addition, the National Programme will free up money over time through the introduction of lower cost and highly sophisticated IT systems. Common systems across organisations will mean significant reductions in retraining costs of staff.

Many staff move to a different NHS organisation each year often requiring training in the use of a different IT system. Standard computer systems mean simpler training for staff as they move between hospitals.

Other significant financial benefits are also expected as the new IT systems will free doctors and other staff from unnecessary and time-consuming administrative tasks.



Value for money

With over £6 billion to spend, the National Programme for IT is the largest programme of its kind in the world. It must represent value for money while ensuring the quality of the new IT systems that are being introduced in the NHS.

The National Programme is securing best value through a range of measures including special agreements, known as enterprise-wide arrangements (EWAs), with suppliers involved in multiple key contracts. Such procurement arrangements save money for NHS organisations and it is estimated that over £100m has been saved with the EWAs.

This is one of the first times that the NHS has been able to take advantage of its full size to drive down prices and benefit from economies of scale. NHS organisations can access the EWA deals to ensure the best price for products and services. EWAs put organisations in a strong position in negotiations with suppliers, which leads to potential discounts or extras included in the contracts.

NHS organisations are encouraged to make the most of these deals by contacting their SHA chief information officer.

The EWAs do not remove the need for organisations

to go out to tender and demonstrate value for money.

In addition, a nine-year licensing contract for desktop products agreed with Microsoft, renewable every three years, will save the NHS £330 million on the current deal.

It means improved patient safety as NHS staff will continue to use familiar software, reducing the possibility of error.



Enterprise Wide Arrangements

The full list of EWA companies are:

- CISCO Systems
- Documentum
- EMC Computer Systems
- Health Language
- Hewlett Packard
- Oracle
- SeeBeyond
- Sun Microsystems
- TATA Consultancy Services

» www.npfit.nhs.uk/industry/ewa

Examples of deals available – more information at » www.npfit.nhs.uk/ewa

Supplier	Products	Deal	Saving to the NHS
Oracle Corporation (UK) Limited	World's largest enterprise software company	Covers range of Oracle technology software	Licences and support for these software technology products will be provided at no cost to all NHS bodies, as will database products for non-clinical applications such as financials, if requested directly from Oracle
Sun Microsystems	Leading provider of industrial-strength hardware, software and services	Covers provision of Sun Server, storage, hardware, infrastructure, software and other services	Access to Sun products at a significant discount
Health Language Inc	World's leading supplier of medical vocabulary and concept-based technology	Covers goods, software, services, in particular HLI's language engine technology, LETM	NHS entities will no longer have to pay annual subscription fees to use of the language engine technology
Documentum Software (UK) Ltd	World's leading supplier of enterprise content management software and services	Covers various document and content management products and services	Discounts on supplier's products

For more information about NHS Connecting for Health please visit
www.connectingforhealth.nhs.uk

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08453 660066 or email information@npfit.nhs.uk
quoting reference number 1963a.