NHS Informatics

Final benefits statement for programmes previously managed under the National Programme for IT

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Contents

Foreword

I am pleased to introduce the final collective benefits statement for programmes previously managed under the National Programme for IT. Over the last decade, the NHS has introduced new computer systems and services through this programme to improve how information is stored and shared across the NHS. This has enabled the health service to change processes and to deliver better, safer care for patients.

Major new services have been introduced and are now firmly established within the NHS, such as NHSmail, Secondary Uses Service and Picture Archiving and Communication Systems. These are all underpinned by the NHS Spine and the N3 broadband network. The NHS can now book appointments, capture digital x-rays, transmit prescriptions and move records between GP practices electronically. All of this has provided valuable benefits to patients and clinicians by:

- Supporting the delivery of services designed around the patient;
- Supporting staff through electronic communications, better learning and knowledge management, cutting the time to find essential information (notes, test results etc.) and making specialised expertise more accessible and;
- Improving management and delivery of services by providing good quality data to support operations and service improvement, transparency, clinical audit and governance.

In total, an estimated £3.7 billion in benefits has been realised to March 2012 based on reported evidence from the NHS. Before taking into account the future costs and benefits of the CSC Lorenzo product, we anticipate that a total of £10.7 billion could be realised to the expected end of life of the systems. This is against an expected cost of £9.8 billion over the same period. In addition, a significant range of benefits such as improved quality of care and patient safety are being reported but have not been fully quantified.

The benefits reported to date are, in many cases, disappointing. However, as with any large scale IT infrastructure project, the release of benefits should increase significantly over time as the systems bed in and are able to be utilised to their full potential. As such, the projected benefits now being forecast by the programmes give grounds for optimism.

In order to improve the potential for the forecast benefits to be realised and following the conclusion of a series of reviews carried out by the National Audit Office and the Major Projects Authority, the Government announced in September 2011 an acceleration of the dismantling of the National Programme for IT. That process is now complete and the component programmes are governed as separate entities. As part of this, the Senior Responsible Owners have a renewed focus on value for money and maintaining robust benefits realisation plans. Furthermore, the money committed to national contracts for local care record systems is being reduced by over a quarter. Taken together, these measures will ensure continued emphasis on realising benefits from the investment made to date, whilst enabling the NHS at local level to have more choice, flexibility and control over the systems it uses to help deliver patient care.

Sir David Nicholson
Chief Executive, NHS England
(Previously NHS Chief Executive to 31st March 2013)

1. Introduction

This final collective benefits statement for programmes previously managed under the National Programme for IT is the Department's response to a request by the Public Accounts Committee on 3rd August 2011. The statement sets out the costs of the programme, how benefits have been realised to date and how new governance arrangements will strengthen assurance around the delivery of future benefits. A review of the statement's robustness has been carried out by the National Audit Office and is published separately.

Systems and services delivered as part of the programme are now an integral part of the NHS and they:

- *Support operations and service delivery improvements*. Trusts, for instance, now report an average of 42 hours from the start of producing a diagnostic image such as an x-ray to the time the clinical report is completed, compared with an average of 144 hours prior to the nationwide introduction of Picture Archiving and Communications Systems (PACS);
- *Improve clinical quality and safety*. Accurate information is now available within a patient's Summary Care Record, which is particularly valuable the first time a healthcare professional interacts with the patient on an unplanned basis such as during out-of-hours care;
- *Enable information sharing across organisational boundaries.* The secure transfer of electronic health records using GP2GP is improving the availability of medical information about patients when they switch from one GP practice to another, thereby enabling better clinical decision-making;
- *Provide information securely through electronic communication*. 63% of users of the NHSmail service use it to securely transfer patient identifiable data helping them comply with national information governance requirements;
- *Inform and support improvement in public health*. Commissioners and GP practices regularly accessed the Quality Management and Analysis System (QMAS) to analyse their achievement against a wide set of largely evidence-based clinical care indicators across the services they deliver to patients, enabling them to focus on where the need to improve patient services is greatest.

The benefits realised are set out in Section 2 and Annex A, which shows that the overall quantified benefit to the end of life of the systems is forecast to be £10.7 billion, set against the cost of delivery of £9.8 billion[1]. However, not all elements of the programme have been successful at realising benefits to date. There are two main reasons for this.

[1] To maintain consistency with previous reports all monetary values are stated in 2004/05 prices. The "Lorenzo" element of the CSC contract is currently being renegotiated. The total forecast benefit and cost therefore excludes this element.
Future costs and benefits reported in this statement represent a forecast as at publication. The factors causing uncertainty in the forecasts have been set out in Annex C.

First, some areas of cost in the programme are not fully offset by the reported benefits achieved. For example, national infrastructure programmes such as the provision of the NHS Spine were not forecast to deliver any direct quantifiable benefits. As set out in the original business cases, the investment in these programmes was made to provide underpinning infrastructure for national and local applications that would be supported and enabled by it. The £584 million of unplanned quantifiable benefits that could be derived from the NHS Spine is therefore welcome, but has not offset the lack of reported benefit from national and local services. In addition, the cost of developing and operating the NHS Spine is higher than would be expected if delivered with today's technology and development methods. Replacement of the service is being designed on an agile, collaborative basis, learning the lessons of the past few years.

Second, realisation of benefits from the implementation of local care record services (excluding PACS) has resulted in £0.5 billion of quantifiable benefits being reported in this area. This low level of benefit realisation is also true for the Summary Care Record and Electronic Prescription Service. This is primarily due to the speed of deployment of local systems being slower than was originally forecast.

Although local care record services have now been implemented successfully across both London and the South – and in community, ambulance and mental health in the North, Midlands and East – the systems have not yet had sufficient time to become established and demonstrate quantifiable benefits arising from them.

In contrast, where systems have been in use for an extended period of time, benefits have been realised through changing business processes and the sharing of best practice and demonstrated through case studies and user surveys. Similar experiences have been seen in implementations of health records internationally[2], which have taken up to seven years to see significant benefit and only after critical mass has been achieved. As usage has increased, the level of benefit has increased at a faster rate through improved communication and interaction.

The approach to implementing and realising benefits from centrally funded programmes has therefore changed significantly. New governance arrangements are in place, which ensure that the Department's accounting responsibilities continue to be fulfilled whilst future decisions affecting local services are made at the appropriate level. The National Programme Board previously governing the delivery of the National Programme for IT has been disbanded and the local programme boards refreshed.

The role of the existing Senior Responsible Owners (SROs) that have supported the delivery of the National Programme for IT has been strengthened and their responsibilities clarified, particularly in ensuring value for money continues to be achieved. A list of SROs with accountability for each programme as at March 2012 is set out in Annex B.

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[2] Stroetmanm K.A., Jones T., Dobrev A., and Stroetmann V. N. (2006) "eHealth is Worth it: The economic benefit of implemented eHealth solutions at ten European sites", European Commission, ISBN 92-79-02762-X

The total costs for the programme to contract end have been reduced from £12.7 billion estimated by the National Audit Office in 2008 to £9.3 billion (excluding the costs for the Lorenzo elements of the CSC contract, which is currently being renegotiated). The overall cost for delivery of systems through local service providers has been reduced by around one quarter.

These changes are set out in Section 3 and, taken together, will ensure continued emphasis on realising benefits from the investment made to date whilst enabling the NHS at local level to have more choice, control and flexibility over the systems it uses to help deliver patient care.

2. Progress to March 2012

Section 1 set out at high level some of the areas in which the systems and services delivered have enabled benefits to be gained. Overall benefits of £3.7 billion have been realised to 31st March 2012, as set out in Annex A (with the methodology used to quantify these benefits set out in Annex C).

This section provides more detail on the ways in which benefits have been realised and gives illustrative examples of the how everyday application of the services supports the provision of care.

Improving operational and service delivery

Plymouth ICT Shared Services has used NHSmail to alert community workers if their patients have unplanned hospital admissions. They combine this with alerts to hospital staff where the patient being admitted is already being cared for in the community, ensuring that service delivery is coordinated across primary and secondary care.

Black Heath Medical Centre in the Wirral uses NHSmail to text patients to invite them to their annual flu inoculations.

The Cornwall and Isles of Scilly COIN links distant sites to the A&E department at Treliske hospital. Using Video Conferencing technology, this enables staff treating patients at remote clinics to gain access to expert diagnostic opinion from consultants at the heart of the county; meaning better informed decisions can be made for the good of the patient.

Systems and services delivered as part of the programme are now contributing to improvements in operational and service delivery in the NHS, leading to reduced costs and improved efficiency and effectiveness. Whilst not comprehensive, the examples below give an indication of the kinds of operational and service delivery benefits that are being realised in the NHS.

NHSmail

NHSmail is a good example of national infrastructure provided through the programme replacing existing, locally-provided services. As a result of the introduction of NHSmail, 1,482 local email services have so far been decommissioned resulting in reduced costs and a more secure way of exchanging clinical information across organisational boundaries.

Every month, around 250 million messages are sent and received through NHSmail. This has enabled local communities to provide innovative local services.

NHSmail also supports the booking process through provision of SMS text reminders, which are provided free to users. A survey in 2011 indicated that nearly 35% of the SMS messages sent via NHSmail are in the form of patient reminders contributing to reducing the number of missed appointments and as a result, reducing wasted clinical and administrative time.

Choose and Book

Where Choose and Book has been implemented successfully, there has been a reduction in patients not attending their appointments, resulting in less time off work through better planning, and a reduction in overall treatment times.

Processes in communities using Choose and Book are generally more effective when handling exceptions compared to paper-based/manual processes. Administrative time has also reduced with less time spent identifying where referrals are within the overall system.

Summary Care Record

The Summary Care Record, whilst primarily being designed to improve clinical safety, also brings operational benefits. For example, out of hours services are using the record to change their approach to delivering care, reducing the need for follow-up appointments.

Picture Archiving and Communications Systems (PACS)

The use of Picture Archiving and Communication systems has enabled Trusts to completely eliminate the need for film and chemicals for conventional image processing. This has removed the need to manage, transport and store physical images. Many Trusts moved more rapidly to a filmless environment than originally planned.

PACS is also enabling diagnostic services to improve operational effectiveness. Trusts now report an average of 42 hours from the start of the diagnostic imaging procedure, such as an x-ray, to the time the clinical report is dictated, compared with an average of 144 hours prior to the nationwide introduction of PACS, enabling quicker diagnosis.

GP2GP

GP practices have cited that the totality of the (combined paper and electronic) record, through the use of GP2GP, is more structured and ordered, making it easier to find and confirm the existence of particular information. GPs said they save on average 3.3 minutes per transfer to

At Pennine Acute Hospitals NHS Trust, 4.3% fewer patients missed their appointments when the referral was made through Choose and Book. If this reduction was seen across England, this would be equivalent to avoiding the cost of 292,000 appointments annually where patients did not attend.

The out-of-hours services at Medway on Call Care, based on a survey of 70,000 patient encounters, reports that where a patient's Summary Care Record (SCR) is viewed when giving telephone advice, face-to-face follow-up appointments are reduced by between 3% and 7%. When the SCR is viewed as part of a face to face appointment with a clinician, subsequent follow-up appointments were reduced by between 8% and 14%.

Nottingham University Hospitals NHS Trust, the first organisation to take PACS in the Eastern region, became 80% film-less in just two weeks. Having learnt from experiences of other organisations Gateshead Health NHS Foundation Trust became filmless in just two days.

In practices with a high turnover of patients, such as Leeds Student Medical Practice who register in the region of 6,000 new students annually, GP2GP enables substantial administrative time savings.

review paper notes, also noting that it is invaluable to have an electronic health record available almost immediately when new patients register in comparison to the several weeks it takes to transfer paper records.

GP2GP record transfer has freed-up administration and clinical time, with patient notes transferred between practices electronically. The service reduces the need to prepare and print out electronic patient notes by the practice where the patient is leaving, saving around 10 minutes in administrative time per transfer. Similarly, the practice where the patient is joining saves 15 minutes in administration time by not having to rekey essential data from the patient notes.

N3

A secure broadband network – N3 – is now fully deployed across the NHS, giving access to a range of voice and data services. Savings have been realised by nationally negotiating the tariff for voice, video, and other data transmission methods. A reduction in power usage has been achieved by implementing more efficient equipment and reducing the need to travel, with total carbon savings of 56,950 tonnes. Across England, nationally-agreed tariffs have saved an estimated £149 million.

The network is also now being used by Trusts for video conferencing and enables (for example) multidisciplinary teams to share clinical data when planning care for cancer patients.

Map of Medicine

The Map of Medicine has been used to reduce variation in care provided by agreeing local pathways (a protocol of patient care for a specific condition) on nationally developed guidance across a care community. 50 local heath communities have now localised the guidance available.

Local care record services

Local care record service systems have been implemented across Trusts providing community, child health, mental health and acute services. In many instances, these systems have replaced paper based

NHS Camden is seeing financial savings equating to around £20,000 per annum as a result of using N3 Local Gateway Services, which provides lower cost telephone calls to people outside the NHS and free of charge calls to those also using the N3 network. They are making 10,000 formerly chargeable free calls a month, while 29,000 calls to mobile phones and premium rate numbers are charged at 30 per cent less than other available tariffs.

TPP SystmOne, implemented as part of local care record services in Kirklees PCT has dramatically improved access to their podiatry service by allowing booking of appointments by administrative and podiatry staff from any location.

At University Hospitals Morecambe Bay NHS Trust, Immediate Discharge Summaries are generated from the Lorenzo clinical record and supplemented by a narrative from the clinician. 2,500 electronic discharge summaries are now produced every month compared with 20 when the system was first introduced.

Two local health communities, NHS Leicester and Rutland and NHS Tees, have reported that using the Map of Medicine has reduced the time taken to develop patient care pathways by up to eight months. This is estimated to have saved between 45% and 60% of the cost of developing guidance by adopting national clinical standards as the baseline.

GPs, nurses, pharmacists and other healthcare professionals from across Bolton, Bury and Rochdale and Medway indicated in a survey that using Summary Care Records in out of hours care had increased safety in treating patients. They reported fewer instances of patients being prescribed medication in the absence of information. In-built alerts and prompts upon receipt of the patient record encourage clinicians to review and identify any current relevant issues.

records or systems with limited clinical functionality and created a patient record which can be accessed across multiple clinical locations. This has enabled redesign and operational improvements in local services.

Improving clinical safety

Having the right information immediately available at the point of care is a key way to ensure that safe and appropriate treatment is given. The examples below show how systems and services delivered by the programme are contributing to improvements in patient safety.

The NHS Spine

The implementation of the NHS Spine services has increased the adoption of the NHS Number as the prime patient identifier, enabling safer care by linking and tracing of a patient's records across NHS organisations. 40.2 million enquiries are made to the Personal Demographics Service (PDS) every month to confirm correct identification and contact details for patients. This has minimised misidentification of patients, assisted in linking health records, and improved data quality. It has also contributed towards reducing annual payments (made on the basis of population) that would have been made for inappropriate long standing duplicate records.

Summary Care Record

Improved access to clinical information and implementation of national standards and applications has supported clinicians in delivering safe and appropriate care. This is particularly true when unplanned episodes of care take place and where existing patient records may not be accessible.

Picture Archiving and Communications Systems (PACS)

As a result of introducing PACS, the risk of medical exposure to ionising radiation has been reduced by cutting clinically unnecessary repeat x-rays, estimated at a rate of 5% prior to the implementation of PACS across England has now fallen to below 1%.

Local care record services

Local care record services, where implemented, have created a patient clinical record, which has enabled clinical information to be readily available from which trends can be identified more easily to facilitate earlier intervention, increased sharing of information across services, improved reporting of outcomes and potentially earlier identification of children and adults who are vulnerable.

Electronic Prescription Service

The Electronic Prescription Service is enabling prescribers, including GPs and practice nurses, to send prescriptions electronically to a dispenser of the patient's choice. The service has enabled the implementation of a standard drug dictionary, the NHS Dictionary of Medicines and Devices, across GP practices and pharmacies in primary care. As at March 2012, over 665 million electronic prescription messages had been transmitted in parallel to the existing paper prescriptions, ensuring consistent descriptions and codes for medications are used across the system, reducing the potential for errors to occur.

Choose and Book

The use of Choose and Book for referral from primary to secondary care has led to fewer referral errors. Users have clarity on the referral criteria and certainty around the status of a referral. This, combined with simplified processes, aids earlier identification of errors that could occur. The approval of referrals electronically, where implemented in secondary care, saves times for consultants and provides an audit trail of referrals made, increasing patient safety.

Providing Information Securely

The confidentiality of patient records is of paramount concern and systems and services delivered as part of the programme have been instrumental in helping the NHS to move away from the physical storage and movement of records to secure electronic storage, transmission and retrieval of information. Some of the ways in which this has been done are described below.

NHS Smartcards

Every individual accessing NHS Care Record services does so using a smartcard which is unique to them. Over 676,000 such smartcards have now been issued. Through a link with the NHS Employee Staff Record, this has meant reduced administration and helps to reduce the risk of errors in providing access. It is now easier to identify control and audit legitimate access to patient administrative and clinical information.

NHSmail

NHSmail is being used by 63% of users to securely transfer patient identifiable data. The service provides greater security, both in terms of authentication (identifying who the email is from) and encryption (ensuring that the recipient alone can read the email).

Data security and standards

Systems and services are now delivered more securely, with data stored in safer environments and physical access restricted to only those with a genuine requirement to do so. Accuracy of data has also increased through the adoption of standards for recording and transmitting data across systems.

Providing high quality management information

As systems and services provided by the programme have moved into widespread use, they have begun to provide valuable information for strategic planning, service development and operational management, in addition to enhancing care delivery. This has supported organisations in becoming more responsive to changes in care requirements for their local populations.

Choose and Book

For example, management information from Choose and Book on referral demand and capacity enables capacity issues in locally provided services to be highlighted and more easily addressed so that resources can reallocated.

Secondary Uses Service

The Secondary Uses Service (SUS) has enabled a consistent Payment by Results policy to be implemented across England, supporting providers and commissioners to reconcile charges made against services delivered. In the financial year to March 2011 this assisted the NHS in assuring payments of over £40 billion. In addition to supporting reimbursement, SUS has also made a consistent dataset available to both commissioners and providers, and supported local and national performance monitoring to improve performance in the NHS. The Hospital Episode Statistics and NHS Comparators provided by the NHS Information Centre for Health and Social Care, and the Payments by Results National Benchmarker tool provided by the Audit Commission, all rely on the information derived from SUS.

The Kent Cardiovascular Network is using the N3 network to link local facilities with main centres of expertise in London. Consultants can send angiograms instantly and view them in real time with colleagues in London. Invasive cardiac procedures can now be conducted locally with the knowledge that experts are on hand. In the last year, nearly 400 angioplasty procedures were safely carried out in Kent. Before the network was implemented, all patients had to travel to London for those procedures. This is saving a huge amount of patient inconvenience and travel. The network estimates that 30,000 miles of travel have been eliminated in one year alone.

The Audit Commission report "Improving data quality in the NHS: 2010" found that the accuracy of clinical coding improved from 2007 to 2011. The identified coding error rate dropped from 16 per cent to 11 per cent in this period.

Quality Management and Analysis System

Performance management organisations and GP practices have used the Quality Management and Analysis System (QMAS) to analyse their achievement against a wide set of evidence-based indicators across the services they deliver to patients, such as care provided to patients with chronic diseases. Each year the NHS Information Centre for Health and Social care publishes comprehensive information based on data from QMAS. Almost all GP practices supply data electronically through their clinical systems. This has shown patterns and prevalence of common chronic diseases such as asthma, diabetes and coronary heart disease, which enables organisations to plan and make better utilisation of their resources addressing the needs of their local population.

Offender Health IT

The Offender Health IT programme has introduced a national clinical IT system for all prisons across England. This has removed the need to search through reams of paperwork – from hospital referrals to medication history – in order to locate the information most important to the prisoner's health. This is particularly true for prescriptions, ensuring prescribing issues can be identified so that they can be addressed, limiting the potential for errors.

Variations in local care record systems

Local care record systems vary according to the needs of the different NHS providers in England. Systems from the local programmes have been supplemented with clinical systems provided to GP practices under the GP Systems of Choice programme.

London

Local care record systems for London are provided by the London Programme for IT. This programme provides systems for acute, primary care and mental health Trusts. A contract was signed with BT in 2003 to deliver systems for the whole of the NHS in London.

Barts and the London NHS Trust have used Cerner Millennium to create a paper-light environment in the Haematology centre. This work was clinically led by the Consultant in the unit and has been recognised by the receipt of 'the best example of digital transformation award in the 2011' in the UK Public Sector Digital Awards.

The benefits achieved include real time access to the electronic clinical record which can be shared by all authorised users, flagging patient's serious and often rare conditions such that they are identified in A&E immediately. The paper light environment results in recording of notes from important telephone calls, emails and other interactions straight into the record. Authorised users, from clinicians to administrators, now benefit from the same up-to-date and accurate information to allow them to manage patients more effectively. Vital pieces of disease-specific data for a particular patient are now at clinicians' fingertips, thereby helping avoid mistakes.

There were significant early challenges in the delivery of the systems. These have been variously addressed by changes to the original contract in response to the requirements from the NHS. In 2005 interim solutions were introduced to permit earlier deployment of systems whilst awaiting the strategic solutions. In 2007 a best of breed approach was taken, moving away from a single solution to care setting specific solutions, with CSE Servelec RiO solution adopted for community and mental healthcare settings and the Cerner Millennium solution for hospital Trusts. This approach was further refined in 2009 introducing more flexibility in the functionality that was deployed to individual acute Trusts, and local tailoring of those systems.

Invariably the increased flexibility increased the overall cost of delivery of the systems. However, the significant number of systems now deployed demonstrates that a more localised and tailored approach has been ultimately more successful.

At the end of March 2012

- Initial deployment has been completed for all contracted Community and Mental Health Trusts; 53,000 users were registered to use community and mental health systems, with approximately 5,500 users accessing the system concurrently.
- Initial deployments had been completed for almost all acute Trusts included within the contract; Over 60,000 users are registered to use acute systems, with approximately 3,800 users accessing the system concurrently;

Mental health trusts in London have used their clinical system (CSE RiO) to support the implementation of a care programme approach (CPA). This has resulted in significant increases in the number of clients (50% community, 70% inpatient) who have a CPA review within six months and over 77% increase in the number of clients on a CPA with a care plan intervention.

South

The Southern Programme for IT (SPfIT) deployed systems across the three southern regions: the South West, South East Coast and South Central. The original contract was signed with Fujitsu. However, in May 2008 this contract was terminated. At that point, Fujitsu had delivered the first release of Cerner Millennium to eight acute Trusts in the South.

In March 2009, BT was appointed to support the eight hospital Trusts live with Cerner Millennium in the South (later to become seven as the result of a trust merger) and deliver a series of system upgrades.

Overall, £151 million was paid to Fujitsu for delivery of the first release of Cerner Millennium to the eight acute Trusts and transferring live services to BT, which has decreased the overall value for money achieved in deployment of systems in the South. However, the Department is seeking to recover some of these costs as part of the ongoing dispute with Fujitsu. The termination of the Fujitsu contract is also estimated to have delayed progress in implementing local clinical systems by at least 2 years.

BT was also contracted to deliver the community and mental health system, CSE Servelec RiO, to 19 organisations across the south, and Cerner Millennium in a further 3 Trusts. The contract only includes a subset of the Cerner Millennium functionality available to London.

Like London, the best of breed and modular approach to delivering systems has enabled all contracted systems to be delivered and the systems are now in use by over 35,000 community and mental health and 30,000 acute staff.

A set of procurements is now in advanced preparation to deliver best of breed solutions and resulting benefits to the remainder of south organisations.

NME

The North, Midlands and East (NME) Programme for IT provides care record services across six strategic health authority regions in England. In 2003, two contracts were let to Accenture (for East of England, East Midlands, Yorkshire & the Humber and the North East) and one to

CSC (North West and West Midlands). Both were contracted to provide iSOFT Lorenzo to community, acute, ambulance and mental health Trusts. In 2007, Accenture withdrew from the programme and the majority of its contract was transferred to CSC. A further amendment was made in 2009, enabling the deployment of TPP SystmOne as a strategic solution.

Lorenzo is one of the strategic products provided in the North, Midlands and East region. This is accompanied by a small number of other systems that collectively comprise the core service:

- TPP SystmOne (the second strategic product for primary care Trusts, community sites, hospices, prisons and GPs);
- An emergency care solution for ambulance Trusts; and
- Map of Medicine.

When using paper records, between 30% and 40% of records were not completed, lost, or filed late, across the east of England Ambulance Service. In an audit carried out after implementation of a local care record system to support the ambulance service, no records were identified as missing.

At University Hospitals Morecambe Bay NHS Trust, the implementation of Lorenzo has enabled the Infection Prevention Nurses to keep track of patients carrying infections and be alerted when they are admitted to hospital, reducing the risk of cross infection.

As discussions around the future of the Lorenzo system continue, CSC has also provided a range of interim products, such as iPM and iCM patient administration systems, to meet the immediate needs of Trusts until the strategic solution is available. These have provided benefits to Trusts where there previously were no systems available. Products are now being used by large numbers of staff on a regular basis, with 12,000 iPM, 1,000 Lorenzo, 400 Emergency Care Solution and 38,000 TPP SystmOne registered users.

The first release of the Lorenzo system has been deployed to seven Trusts, with a more functionally rich release being deployed to a further three Trusts. The most recent Lorenzo deployment at the Humber NHS Foundation Trust appears to be demonstrating improved deployment processes which could lead to benefits being realised sooner.

GP Systems of Choice

GP Systems of Choice is a national contractual framework which provides GP practices with a choice of nine accredited GP clinical IT systems. The framework has improved value for money to the NHS by working with local organisations to negotiate and publish pricing across the range of services provided by the suppliers. It has also facilitated changes to the clinical systems to deliver services such as Choose and Book, the Electronic Prescription Service, GP2GP and Summary Care Record.

Over 80% of practices in England now have a clinical system provided under the framework, with the rest having systems provided by the local service provider for the North Midlands and East. A key benefit of these arrangements is that 41% of GP practices in England now use data centre hosted systems, meaning sensitive clinical data is now stored more securely.

Providing an enabling infrastructure

The national infrastructure was a pre-requisite to enable delivery of the products and services which have in turn, enabled delivery of benefits across the health system. For example, information services such as NHS Evidence (a service that enables access to authoritative clinical and non-clinical evidence and best practice through a web-based portal) are now readily available throughout the NHS because of the N3 network.

Such facilities have also supported service changes under the QIPP initiative, e.g. through support for the work of geographically-dispersed multi-disciplinary teams. A study by the Department into Mobile Health Workers identified significant reductions in unnecessary admissions and in fruitless visits in the pilot sites.

The infrastructure has also provided the platform for the future changes outlined in the recently published information strategy. For example, sharing of information is only possible because the NHS Spine allows all care settings to identify a patient's NHS number.

Conclusion

Whilst the above examples do not seek to provide a comprehensive picture of every application of these systems and services, they do present a compelling picture of the kind of benefits that have been realised so far and some of the areas in which local innovation in the NHS is beginning to build on what has been delivered.

Section 3 looks at the changes that have been made in the way these programmes are being delivered and that address the low level of benefit reported to date from implementation of local care records systems, in particular.

3. Achieving value for money

The previous section gave some examples of how programmes previously managed as part of the National Programme for IT are successfully delivering a range of services on which the NHS now relies. The National Audit Office (NAO) recognised in their report on the National Programme for IT in May 2011 that delivery of these systems was almost complete, and the majority were providing the NHS with valuable infrastructure and services.

Clearly, however, the benefits reported to March 2012 of £0.5 billion from the implementation of local care records systems are disappointing. The lack of progress in supplying these systems, particularly in secondary care, was an area highlighted by the National Audit Office in their report on the delivery of the detailed care records system in May 2011 and was the focus of the Public Accounts Committee in May 2011. This was also a key concern raised by the Major Projects Authority in their review in June 2011.

All underlined that a top down approach to implementation of local systems had not delivered the benefits expected. This has been accepted by the Department and, in September 2011, the Government announced an acceleration of the dismantling of the programme.

Improving governance

The dismantling has resulted in a major revision of governance. The new governance arrangements are in line with best practice in that they place accountability on an individual Senior Responsible Owner (SRO) for each programme. The SRO has end to end responsibility for the delivery of benefits from their programme.

To reinforce and emphasise the role of the SRO the Department has worked in conjunction with the Cabinet Office to ensure that best practice and principles are embedded and applied across these programmes. The Department and Cabinet Office will continue to monitor and provide necessary support to individual SROs as they improve programme governance arrangements and provide programme leadership with a focus on delivering benefit and return on investment.

To ensure continuity, teams responsible for delivery of the programmes are being transferred to the Health and Social Care Information Centre, the organisation that will manage the continued delivery of services to the end of their contracts on behalf of the Department.

There may be a need for some further changes in governance as a result of the NHS reforms. However, the principle of strong accountability will be maintained by ensuring that each programme continues to have an SRO capable of taking end to end responsibility. Annex B sets out the SRO for each programme as at March 2012.

The local IT programmes (those where local service provider contracts are, or were in place) have been an area of key focus for refreshing the governance approach. The SROs of these programmes have had responsibility for the delivery of benefits in each area, reporting to the

accounting officer, such as the Strategic Health Authority Cluster chief executives. Whilst the local service provider contracts continue to be held centrally, the SROs and their boards are responsible for ensuring that the needs of their local Trusts are reflected in decision making.

An NHS Informatics Portfolio Board was established to provide oversight and assurance across the programme portfolio. The board ensures that gaps and overlaps in provision are managed, that best practice is shared, that priorities are well managed and that value for money is sought across the portfolio. The board will also ensure that the governance arrangements for each programme are appropriate and that internal and external quality reviews and approvals are being proactively managed by programme SROs.

A revised financial baseline is being developed for each individual programme, which will enable SROs to have a clear picture of the end to end delivery costs and be able to compare this to the benefits position.

Over time, contracts and funding for each local programme may be owned outside of the Department (as is now being planned for in London) and be closer aligned to local delivery. Where this is the case, transition arrangements are being developed by each programme that ensures continued supplier engagement, and coordinated exit from the existing arrangements. The future approach to funding will promote efficient and effective investment in IT that recognises the strength of local decision making and meets the needs of the wider NHS.

Focusing on benefits realisation

The need to focus on benefits realisation has been clearly recognised. The SROs therefore have a critical role in ensuring that value for money is achieved and that benefits from the investments made to date are maximised.

Progress statements will continue to be made by individual programmes to ensure that the money spent delivers value. This will initially be overseen through the NHS Informatics Portfolio Board for programmes where the Department has accounting responsibility and any transition managed as part of the wider NHS reforms.

The programmes collectively forecast that they will realise £10.7 billion to the end of the life of the systems implemented. 65% of this is due to be realised as part of implementing local services. Going forward, the focus on improvements as a result of business change needs to be strengthened to ensure that the forecasts are achievable.

A greater emphasis is being placed upon ownership of benefits and benefit realisation plans locally with greater support being provided to local benefits realisation teams. Additionally a team with expertise in benefits realisation has been established within the Department to help drive maximum benefit from investments. In conjunction with a benefits stakeholder group across programmes and the local benefits realisation teams in the NHS, the central team will provide guidance, tools, training and leadership to dedicated individuals focused on benefits realisation within the programmes.

The team will link across the local teams and national programmes where the approaches have been different, and link to programmes such as Quality Innovation Productivity and Prevention (QIPP). This will mean that the NHS will be supported to derive benefits from changing business practices that have been enabled by implementing new systems and will be supported in identifying metrics and measuring benefits that have previously not been quantified.

This change of approach is reflected in the forecast benefits for local care record services. To date benefits reported are primarily due to more effective use of administrative staff and some costs avoided on system maintenance charges. Future benefits are expected to come from change in processes which will reduce cost through reductions in avoidable adverse incidents, reduction in medication budgets, and reductions in the length of time patients are expected to stay in hospital. The change in approach is also reflective of experience internationally, where benefits generally materialise some time after systems have been successfully deployed.

The NHS Future Forum has also highlighted the importance of information sharing to support integration of services and improvements in safety and quality so it is likely that some of the work done as part of the programme will continue to be relevant to the NHS and benefits will continue to be realised.

Changing the approach to local implementation

The Major Projects Authority recommended in June 2011 changes in the way local systems were delivered. The Department has now implemented these recommendations.

There are numerous examples of the change in approach. For example, in London, planning for the future delivery of systems beyond the current local service provider contract is well advanced and is being driven locally.

Where national system contracts are coming to an end, new approaches are also being considered to drive down cost and increase value for money. For example, replacement of the current Spine service is being designed on an agile, collaborative basis. The overall commitment for delivery of systems through local service providers has been reduced by over one quarter. The precise value will depend on the agreement reached with CSC, the provider of local care records services for the North, Midlands and East. However, the reduction in commitment on this contract alone is likely to be in excess of £1 billion.

The change in approach with CSC should mean that the functionality in Lorenzo, the care record system for acute Trusts in North, Midlands and East (NME), will be re-scoped to focus on that which is likely to provide the biggest benefits to the NHS. Much of this functionality is already available to deploy. Trusts that can benefit from the Lorenzo system will now be able to choose to deploy it, rather than being compelled to do so. These changes should mean that benefits can be realised more quickly than previously.

The forecast costs and benefits in relation to CSC only relate to the non-Lorenzo element of the programme and do not include forecasts in relation to the Lorenzo element.

The new approach is also reflected in the procurement of systems for Trusts that did not receive a system under the local service providers in the South. The revised approach is designed to enable a flexible, dynamic market, rather than a one-size-fits-all approach and to promote local choice and flexibility.

A Summary of quantifiable benefits

Table 1 –Cost and benefit by programme (Stated in 2004/05 prices)

	Cost to			Benefit to				
	March 2011	March 2012	End of Life	March 2011	March 2012	End of Life	Expected End of Life	Note
	Actual £m	Actual £ m	Forecast £ m	Actual £m	Estimated £m	Forecast £ m		
Local services								
Core contracts for local clinical systems								
London	597.5	748.6	1,245.3	18.9	20.8	861.1	Mar 2021	
South								
Core	585.3	683.0	978.1	15.7	27.2	659.6	Mar 2017	
Local clinical systems for the south			298.1			777.6		1
North Midlands and East (excluding end of life costs and benefits for Lorenzo elements of the CSC contract)	1,695.7	2,037.9	2,906.7	120.7	478.6	3,535.9	Jul 2022	2
Picture Archiving and Communications System	855.2	923.8	1,022.3	729.9	904.7	1,075.2	Mar 2016	
	3,733.7	4,393.4	6,450.5	885.1	1,431.2	6,909.4		2
National Applications								
Choose and Book	260.9	280.7	312.0	647.9	820.5	1,184.9	Mar 2016	3
GP record transfer	33.2	34.5	41.5	9.9	14.8	31.5	Mar 2016	
Additional Services (including Electronic Prescriptions Service and Summary Care Record)	479.2	502.1	598.2	10.8	16.6	919.2	Up to Mar 2021	
	773.3	817.2	951.7	668.6	851.8	2,135.5		
National Infrastructure								
N3	771.4	848.1	962.9	645.3	674.5	712.1	Mar 2013	3
NHSmail	221.1	238.0	296.1	164.4	278.2	348.3	Mar 2015	
NHS Spine (including Secondary Uses Service)	915.6	1,007.1	1,122.7	299.8	421.2	583.5	Mar 2014	
	1,908.1	2,093.2	2,381.7	1,109.5	1,373.9	1,643.9		
Total Committed (excluding end of life costs and benefits for Lorenzo elements of the CSC contract)	**6,415.0**	**7,303.8**	**9,783.9**	**2,663.1**	**3,656.9**	**10,688.9**		2

Notes

1. Separate procurements are underway for those Trusts in the South that did not receive a system under the contract with BT, following the termination of the Fujitsu contract. Whilst the procurements have not yet completed, the associated costs and benefits are reflected in the table.
2. Costs and benefits to March 2012 include both Lorenzo and non-Lorenzo elements of the CSC contract. However, the Lorenzo element of the CSC contract is currently being renegotiated. Therefore forecast end of life costs and benefits include only non-Lorenzo elements of the CSC contract.
3. The original contracts for Choose and Book and N3 ended in December 2009 and March 2011 respectively. These have been extended and the overall costs and benefits, including the extensions are reflected in the table.

Annex C provides a summary of the methodology and accounting policy to derive the figures set out in Table 1 and sets out the factors causing uncertainty in forecasts.

B Senior Responsible Owners

Each programme is led by a senior responsible owner with responsibility for ensuring the delivery of the programme against its business case and realisation of the associated benefits.

The senior responsible owners responsible for each programme are listed below as at 31st March 2012. These individuals were not necessarily responsible for costs or benefits realisation during the period covered by this report.

Programme	Senior Responsible Owner
Local services	
NHS Care Record Services for London	Dame Ruth Carnall, Chief Executive, NHS London
NHS Care Record Services for the South	Candy Morris, NHS South of England
NHS Care Record services for the North, Midlands and East	Steve Clarke, Director of Finance, NHS Midlands and East
Picture Archiving and Communications Systems (PACS)	Professor Erika Denton, National Clinical Director for Diagnostic Imaging, Department of Health
National Applications	
Choose and Book	Ailsa Claire, Transition Director Patients and Intelligence, NHS Commissioning Board Authority
GP2GP records transfer	Tim Donohoe, Director of Programmes and Operations, NHS Informatics, Department of Health
Electronic Prescription Service	Giles Denham, Director and Head of Medicines, Pharmacy and Industry, Department of Health
Summary Care Record	Dr Charles Gutteridge, National Clinical Director for Informatics, Department of Health
Secondary Uses Service	Martin Campbell, Deputy Director for Payment By Results Development, Department of Health
Quality Management and Analysis System (QMAS)	Richard Armstrong, Head of Primary Medical Care, Department of Health
National Infrastructure	
National Network for the NHS (N3)	Paul Jones, Chief Technology Officer, NHS Informatics, Department of Health
NHSmail	Dr Simon Eccles, Medical Director, NHS Informatics, Department of Health
NHS Spine	Paul Jones, Chief Technology Officer, NHS Informatics, Department of Health

C Methodology

The methodology to identify, validate and measure benefits was developed with input and oversight from the Cabinet Office, and in line with Major Projects Authority guidance on best practice. It is supported by a set of guidance and tools on benefits measurement and management, developed by the Department of Health's Informatics team in co-production with the SHAs. This includes:

- An NHS Benefits Eligibility Framework based on Cabinet Office best practice and assured by the Department's Capital Investment Branch and Chief Economist's office. The Benefits Eligibility Framework was made available to the NHS in December 2009 and provides guidance on the consistent identification, measurement and management of costs and benefits in relation to informatics and IT-enabled programmes. All quantified (cash and non-cash releasing) benefits data submitted for the Statement has been assessed against this framework.
- An on-line resource, the Benefits Information Zone, provides benefit templates and a set of key benefit metrics for the majority of national application products. The detailed metrics that were identified for each component have been reviewed by stakeholders including SHAs and programme teams.

The benefits set out in the statement fall into four categories: financial cash releasing benefits, which provide a direct financial benefit; economic benefits, which can be quantified in monetary terms but are not expected to achieve a direct saving; societal benefits, which provide quantified monetary benefits to broader society; and qualitative benefits, which have not been quantified.

Evidence of emerging benefits of systems deployed up to the end of March 2012 has been included in the report. If statistically sound to do so, benefits evidenced in a sample of sites have been extrapolated across the total deployment profile of the relevant functionality or service.

This methodology for collecting, analysing and reporting costs, deployment figures and, in particular, actual benefits and their extrapolation has been confirmed as appropriate by the Department's Chief Economist's office.

Baselines

The expected benefits were set out by a series of business cases that collectively represented the overall scope. These have provided the basis for establishing baselines for this statement. Deployment and benefit estimates were provided in the relevant business cases. Any changes to these baselines have been taken into account.

Some changes have been made to the scope and approach since the programmes began. In the main, these have been made to maintain alignment with the priorities of the NHS and to

reflect changes to the organisational and NHS system architectures during that time. This statement takes account of these changes.

Data sources

Programme teams have provided the number of deployments of a particular product. This data was subsequently validated with the NHS and the usage of each of the systems established with them.

Actual benefits reported have come from national programmes for national benefits and the NHS via the SHAs for local and regional benefits. The SHAs were actively engaged in establishing data collection using the tools and guidance developed and agreed. Benefits have only been recorded for systems that have been in place for at least 12 months, to allow time for the systems to stabilise and for the evidence of benefits realised to be measured and reported. The estimated benefits to March 2012 were estimated utilising evidence from reporting NHS organisations and programmes extrapolated to deployments through to March 2012.

For historic reasons, not all costs incurred in delivering the programmes were fully allocated to each individual programme in previous reports on the National Programme for IT. This has been addressed within this statement. Where costs are indirectly attributable to a specific programme these have been proportioned on the basis of those that are directly attributable.

As programmes mature, metrics continue to be developed and improved. However, the metrics do not capture, measure and report all benefits experienced by frontline staff. The figures quoted therefore do not reflect the totality of all benefits realised, only those that have been evidenced and where metrics have been established.

Accounting Policies

To remain consistent with previous reports all monetary values are reported at 2004/05 prices, discounted at a constant annual rate of 2.5%.

It is not possible to directly compare costs reported in this statement to those in previous NAO reports. However, overall costs have reduced from £12.7 billion estimated by the NAO in 2008 to £9.3 billion, excluding the costs for the Lorenzo elements of the CSC contract, which is currently being renegotiated. Reductions have come primarily from reduced forecast costs in local clinical systems for the south and estimated local costs for deployments.

Some benefits and costs have been forecast to be realised beyond the end of the contract. The length of time beyond the end of contract follows guidance set out in HM Treasury's "Green Book: Appraisals and Evaluation in Central Government" and depends generally on when deployments are made during the life of the contract.

For the purposes of this statement, the annual cost and benefits realised is assumed to continue at the same rate as under the existing contract. Any costs or benefits related to re-procurement, transitioning from one service to another and associated potential changes in functionality has

not been included since these would be accounted for in any business cases to re-procure or extend the services.

Extrapolation

In some instances, particularly within NHS care record services where not all Trusts have reported benefits in all applicable areas, the view on actual benefits has been extrapolated from those reported in a specific number of Trusts, rather than all Trusts concerned. This is done on the basis of a national average for the type of benefit identified in other care settings of similar type.

In other instances, programmes have developed models that estimate the level of benefits realised by extrapolating demonstrated benefit on the basis of utilisation. The type and depth of research conducted to identify the unit benefit has varied across programmes, and has included developing detailed case studies at individual sites, conducting time and motion studies at a sample of sites, and undertaking surveys of all users. In many cases the models for estimating benefit relate directly to the models developed to support the business cases originally approved by HM Treasury.

The estimates of actual and forecast benefits created by extrapolation and other modelling have generally been built on conservative assumptions to guard against optimism bias.

Uncertainty in forecasts

Forecast benefits and costs set out in Annex A have been made by each Senior Responsible Owner on the basis of known information available. This includes data provided in case studies, reporting of benefits by NHS Trusts, expectations of future deployments, and anticipated outcome of any future litigation. As with any forecasts, there will be factors that mean actual costs and benefits realised could be either higher or lower than those set out.

Factors causing uncertainty in costs include: the outcome of the dispute with Fujitsu following their exit in 2008; the contract renegotiation with CSC; and potential transition costs associated with exiting of the contracts at the end of their term.

Factors causing uncertainty in benefits include: delays in future deployments for programmes that have not yet completed a full rollout of their service; continued capacity, capability, and willingness of NHS Trusts in recording and reporting benefits; engagement from suppliers where these will no longer be participating after contract end; limitations of sampling in the case studies chosen to extrapolate benefits; and the contract renegotiation with CSC.

Overall uncertainty has not been calculated. However, by way of example, a year delay in implementing changes required to GP systems for the Electronic Prescription Service could decrease the forecast benefits associated with the service by £75m. Similarly, extending the life for local care record services in the South by an additional year could increase the marginal benefit by £57m.

The level of maturity of individual programmes benefits realisation plans and capability has an effect on the overall uncertainty of forecasts. Where services have been fully deployed and utilised for an extended period of time, it is more likely the forecast benefits will be realised as stated. This would include programmes such as Picture Archiving and Communications Systems (PACS) and Choose and Book. In other programmes such as local care record services where there is not yet full utilisation there will be greater uncertainty, both positively and negatively, in the forecasts.