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An Roinn

**Sláinte, Seirbhísí Sóisialta
agus Sábháilteachta Poiblí**

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HPSS ICT PROGRAMME

From Vision to Reality

IMPLEMENTING THE ICT STRATEGY

March 2005

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Foreword

The HPSS Information and Communications Technology (ICT) Vision¹ published in 2001 focuses on a redesigned care system. ICT in the HPSS is already providing vital support for care professionals and other staff, but changing the HPSS to deliver the vision of fast, effective, and convenient care delivered to a consistently high standard requires new, visible and workable ICT. Exploiting ICT will help ensure that people receive the best possible care, and through making quality outcome data available will allow the continuing effectiveness of that care to be monitored. The key lies in integrating information across health and social care in a single or "whole" system, centred on the individual, which meets the requirements of all parts of the care system.

Quality care for individuals will depend on easy access to electronic records and care plans. There must be the capacity to share information across health and social care and amongst rapid response teams that need to work on an integrated basis across all sectors of care. Redesign on this scale will involve major behavioural and culture change. There will be challenges in redesigning care services around the individual, and establishing a "networked HPSS". Everyone - individuals, multi-disciplinary teams and care organisations - will need to think again about the way that they work.

Access to information services, records and applications has to be supported by the development of good infrastructure and appropriate standards - technical, information and behavioural. There must be full workplace access to information, electronic records and other applications wherever this is required - on the desktop, in the surgery, in the outpatient clinic, at the bedside and on the move. Wherever care is provided there is a record of that care. Today this typically requires update of paper records. Electronic records are crucial to the full development of a person-centred service.

Everyone must be assured that information is held securely and shared according to appropriate legal, ethical and technical processes. Current initiatives will lead to more sharing of information, increasing the responsibility of professionals to protect the data they hold and access, and to preserve the confidentiality of this information. Security of information is critical.

Professional training will have more emphasis on supporting the redesigned care system and also on working with information and applying IT. There may be a need to learn new skills, to agree best practice standards, collect and analyse data, and procure, develop and apply high quality information systems to support person-centred care.

¹ HPSS ICT Strategy - Vision Statement - Consultation Paper, June 2001
<http://www.dhsspsni.gov.uk/publications/archived/2001/vision.pdf>

The HPSS ICT Strategy² is aimed at delivering the strategic vision. The programme of work outlined in the ICT Strategy and described more fully in this report will bring about many changes in the education and training requirements of staff.

The ICT Programme will help develop our health and social services into a modern public service meeting the public expectations of the 21st century. New and enhanced ICT will help to:

- ◆ Improve the care experience for service users;
- ◆ Support and empower care professionals and others involved in care;
- ◆ Improve the efficiency of current service delivery;
- ◆ Facilitate service innovation and development in terms of practice, process and location;
- ◆ Facilitate multi-professional and cross-sector co-operation in care;
- ◆ Support clinical and social care governance and risk management within the HPSS; and
- ◆ Support the research activities of the HPSS and the wider academic communities.

In achieving this, ICT will become an integral part of the business of the HPSS. It must support recording and sharing of high quality information and be capable of adapting to the changing needs of care professionals and the service. Innovative and more effective care processes and methods of working will rely on new and more effective ICT.

This document provides an overview of the ICT Programme that is already under way and outlines further initiatives that will make the vision a reality.

The Programme involves roll-out of new and enhanced ICT and support structures over the next ten years and includes many innovative and exciting new challenges and developments. Much has been done in laying the technology foundations for these changes, but much remains to be done in preparing and equipping those who work in health and social care not only with the technology, but especially with the skills to exploit ICT confidently and as a matter of routine. The task should not be underestimated.

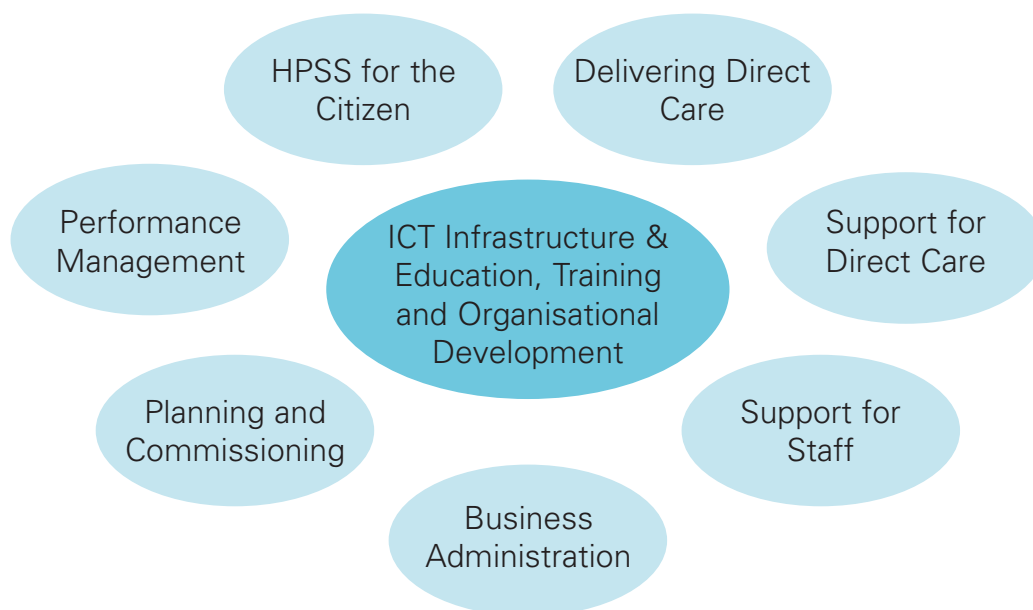
² HPSS ICT Strategy - Final published version, March 2005
<http://www.dhsspsni.gov.uk/publications/2005/HPSSICTStrategy.asp>

1. INTRODUCTION

- 1.1 Although there is much Information and Communication Technology (ICT) already in place across the HPSS, it has yet to be implemented and exploited in the delivery of care. Current ICT includes systems for management and administration and supports analysis and research; but care professionals do not generally have access to ICT services. The information to support the real business of health and social care is still, mostly, on paper. Provision of electronic information services for the public is very limited.
- 1.2 Service modernisation is focussing on person-centred care. New strategies are setting out new ways of delivering care and giving service users more information and more influence on how they are treated. That cannot become reality without the ICT to give controlled access to electronic care records and communicate care data.
- 1.3 Staff, professional groups and the public have all been involved in discussing the problems facing the service and shaping the development of ICT. Our ICT Vision Statement sets out a long-term vision for ICT in the HPSS, focussing on a person-centred service, more direct care and more support for care professionals. The ICT Strategy is aimed at delivering this vision. Better capture, management and exploitation of information is central to realising the vision and modernising the front-line delivery of care. It is a vital element in improving the day-to-day working and developing the skills of staff.
- 1.4 The HPSS ICT Programme includes the projects and work required to bring the vision into a reality. It builds on and updates the Strategy, providing a clearer focus on what our priorities need to be and the actions required to ensure successful implementation. During 2005, many of the projects in the Programme will have a direct impact for care professionals across the HPSS.
- 1.5 Implementing the full Programme will require estimated resources in excess of £110 million with on-going annual costs in the region of £15.5 million. Elements of the Programme have been under way for some years, but the Programme is now gathering pace and has acquired substantial funding commitment. In particular, the Investment Strategy for Northern Ireland 2005-2015, recently issued for consultation, indicates commitment of £95 million for ICT in health and social services over the next 10 years. While the proposed funding does not meet the full projected costs of the ICT Strategy, it will enable considerable progress across Programme priorities.

2. VISION OF THE FUTURE

- 2.1 The ICT Strategy and Vision consider health and social care from a number of perspectives - service users, care professionals, managers and support staff, planners and commissioners - and acknowledge the importance of a robust ICT infrastructure and the skills and resources for education, training and organisational development.



- 2.2 The Strategy Vision describes health and social care supported by information about services, about each individual's care, about best practice, about performance: all securely stored and communicated using ICT and accessible to authorised users wherever and whenever it is needed. Improving the use of information and ICT will ensure that people receive the best possible care.
- 2.3 Service users will have more information about healthy living and proposed care and treatment. They will have more information about what services are available to them and how to access those services. They will have a role in determining the security and confidentiality of their own information and how it is used. They will be able to use standard automated electronic services for routine interactions, such as repeat prescriptions.
- 2.4 Care professionals directly involved in care will have access to data about service users at the point of care. Information will be accessible at remote locations as well as in the more familiar settings of clinics, care centres, hospitals and health centres; electronic care records and communication will be widely used; telemedicine, including digital imaging, will be routine. Care professionals will have access to information and advice on specific problems and conditions with options for treatment, and will be able to find out what services are available and how to access those services.

- 2.5 Appointments for consultations or operations will be booked directly, giving patients more choice and convenience. This will mean fewer cancelled appointments and improved management of waiting lists. More diagnosis will be carried out using video and tele-links to remote specialists, giving service users improved access to care with less waiting and travelling. Test results will be ordered and received electronically. This will mean early diagnosis and less delay and worry for patients and clinicians.
- 2.6 Electronic transactions will be routinely used for the referral, treatment and aftercare for service users and to dispense medicines. ICT will enable the ordering and processing of orders for aids and appliances and requesting adaptations to homes.
- 2.7 HPSS staff will use ICT to support them in their work and to improve workflow processes within and between organisations. They will be able to conduct routine electronic (e-business) transactions for procurement, storing and distribution of all supplies including medicines; invoicing and payments including salaries and expenses, home help payments, foster care payments and so on. There will be common terminology and coding across the HPSS for all business functions.
- 2.8 There will be more efficient systems in place for planning and commissioning services through improved availability of high-quality data and access to knowledge bases. There will be standardised performance indicators for cross-sector and cross-organisational analysis and comparable and accurate data on clinical and social care governance.

3. HPSS ICT PROGRAMME - overview

- 3.1 Working from the Vision, the ICT Strategy identified almost 100 potential ICT projects. Many of these are interdependent and could not be taken forward as separate, individual initiatives. Successful implementation involves integrating information right across the HPSS in a streamlined system centred around the service user, meeting the needs of the care professional and, as a consequence, meeting more general management information, monitoring and planning requirements. A practical, coherent work programme that recognises and manages the relationships and interdependencies between projects is essential.
- 3.2 The changes necessary to make the vision a reality require supporting ICT infrastructure and services to be in place; these have been the first elements of the HPSS ICT Programme to be taken forward. The Programme builds on this foundation to implement Electronic Care Records and Electronic Care Communications.

Electronic Care Records - ECRs

- 3.3 Electronic care records for service users will provide historic and current information as a basis for managing and delivering care. The ECR must of course be managed within a secure environment and accessed only under a strict "need-to-know" regime that complies with confidentiality and consent protocols. The ECR will contain structured data, text and images generated from a variety of sources.
- 3.4 To create and support the ECR, data must be created in electronic form and must be available to care professionals outside the functional area. The need for ECRs is most obvious where care is to be provided through different professionals, different locations and different organisations. It is in this scenario that ECRs will offer the greatest benefits, as an essential tool for communication, to manage data about individuals and their care, and as a way to enable new patterns of care delivery.

Electronic Care Communications

- 3.5 The business of care depends on effective communication of data about individual service users within and between sectors and organisations in the HPSS, with other organisations, and of course with service users. Common examples include appointments, referrals between care professionals, requests for services and communication of the outcome, discharge letters and other follow-up communications and prescribing.
- 3.6 Current systems manage aspects of these transactions within individual organisations, but do not encompass the full range of the transaction. For example, hospital Patient Administration Systems are used to manage outpatient clinics, but

only for administrative aspects of the process within the hospital and not to fully support referral and remote booking. There is no effective ICT support for community care and there is no ICT support for prescribing except in General Practice.

- 3.7 Access to electronic communications must be extended and presented in a way that is simple to use. At the most basic level, care professionals across the service have said that access to electronic mail at work would significantly improve communication and reduce wasted time spent trying to make contact by telephone.
- 3.8 ICT can support fast, accurate and structured communication of care data. For ICT to be truly effective, it will be important to think imaginatively about processes so that use of ICT introduces real improvements to care, beyond what is possible by simply replacing paper with electronic communication.
- 3.9 The HPSS ICT Programme balances a range of factors:
 - ◆ basic ICT services must continue to be put into place and extended;
 - ◆ staff need to be developed in terms of their readiness, knowledge and skills for wider application of ICT;
 - ◆ further policies and standards must be developed and mandated;
 - ◆ the Health & Care Number must be introduced as an underlying support;
 - ◆ some robust applications are in place that can evolve and be built upon;
 - ◆ for some areas new proven solutions are in place elsewhere that can be implemented in the HPSS;
 - ◆ other areas require much further development to ensure robust, practical solutions that reflect HPSS needs and can work in the day-to-day operating environment.
- 3.10 Putting in place the infrastructure that enables services to be delivered electronically to the end-users is a major implementation exercise that must be properly supported. In developing the essential infrastructure it is important that standards, once agreed, are used across the HPSS. By having a standard infrastructure, new and innovative ideas which can be shown to work can be rolled-out much more quickly and effectively than at present.
- 3.11 Safe and secure access to the networked HPSS for health and social care professionals is essential to this infrastructure, as is the process of making information skills a basic part of the education and training of all staff.

3.12 The HPSS ICT Programme is being managed through a Programme Board, established late in 2003 and formally recognised as a sub-committee of the DHSSPS Departmental Board. Its role includes:-

- ◆ Developing and maintaining a prioritised programme for HPSS ICT;
- ◆ Ensuring that the overall management structures, distribution and organisation of ICT staff resources are adequate to deliver the Programme;
- ◆ Ensuring that the ICT Programme takes into account, and is considered within other HPSS strategic initiatives;
- ◆ Monitoring the progress of projects within the Programme
- ◆ Advising on additional projects that may be candidates for admission to the Programme;
- ◆ Advising on securing and monitoring funding for the Programme;
- ◆ Resolving conflicts that may arise between elements of the Programme;
- ◆ Ensuring that there is effective consultation on all matters relating to progress and development of the ICT Programme;
- ◆ Promoting ICT as an essential element in support of service modernisation and development and approving PR and communications in relation to the ICT Programme;
- ◆ Advising on ICT process issues, for example relating to project appraisal, monitoring, risk management, benefits realisation and standards;
- ◆ Determining the need for, and timing of, review of the ICT Programme: for example, to take account of developments in electronic care records or the outcome of the English NHS procurements.

3.13 The following sections outline the ICT Programme projects underway (Section 4) and those that are about to be started (Section 5).

4. THE ICT PROGRAMME - current projects

4.1. Person-centred Community Information System (PCIS)

The PCIS project will establish an integrated community health and social care record for all patients and clients in receipt of community based services. Trusts that provide community services will create the information infrastructure to manage health and social care around the person and across professional boundaries. PCIS will support new ways of working that are essential to modernise and develop better services in the community.

As a major sub-programme within the overarching ICT Programme, PCIS includes support for the organisational change essential to successful implementation as well as procurement of the necessary technical infrastructure and software. The most significant benefits will come from cultural and business change projects that are possible alongside the introduction of ICT, not simply from introducing technology.

In many ways PCIS is breaking new ground, for example in supporting new models of multi-disciplinary care; the pace of progress will reflect that situation.

Procurement

The project team is currently involved in the resource intensive and complex task of drawing up draft contracts with the shortlisted suppliers. A regional full business case will be completed when the actual costs, benefits and risks associated with the successful supplier are available. Contracts are expected to be agreed late summer 2005.

Trust preparation for change

Trusts have been taking forward local developments and pilots to examine current care processes and begin to establish the change activity in service areas affected by PCIS. These developments are already establishing efficiencies from improved ways of working and better communication between professionals independent from, and in advance of, implementation of PCIS.

The work is being progressed within a benefits management framework, and plans are under way to set up a regional database of trust-based PCIS-related pilots and initiatives to help to share knowledge and best practice across the HPSS. The database will also provide an opportunity to evaluate the improvements being experienced. It is expected that this data base will be available for viewing access from the PCIS website during March 2005.

Trusts are working together with the central PCIS team in several important areas of common interest. This programme of work, at the regional level, includes development of strategies and plans for:

- ◆ Training;
- ◆ Change management;
- ◆ Benefits management;
- ◆ Security and confidentiality;
- ◆ Data cleansing and migration;
- ◆ Coding; and
- ◆ Implementation.

Work is also underway to agree common definitions of data items that will be part of the PCIS dataset. This work will refine and standardise language used to record information by different community health professionals and will facilitate sharing of information. The work will take into account developments in UK and international standards in the area.

Another priority will be to look at the forms used for data collection across all community service areas, identify common areas and produce standardised forms where possible. This will be essential to ensure smooth implementation of PCIS and its consistent use across the HPSS but, along with the data definition work, presents a major challenge within current resources.

4.2. ICT Modernisation in GP Practices

Basic electronic links, modernisation of practice systems and links with hospital systems will provide GPs with:

- ◆ access to e-mail;
- ◆ access to the Internet;
- ◆ access to Trust Intranets;
- ◆ electronic transfer of Pathology results from Trust systems to GP clinical systems;

- ◆ access to Trust Patient Administration Systems;
- ◆ the ability to book hospital outpatient appointments from their desktops.

Altogether, this will greatly improve the quality and speed of communications with GP practices. These services should be available to all practices by May 2005. More detailed milestones are being agreed with GP system suppliers and with Board GP Units.

The new GMS Contract requires substantial updating of practice systems and a shift in responsibility for GP ICT to the four HSS Boards. Boards are developing a Service Level Agreement that will define the responsibilities of both parties in relation to ICT support.

Approximately 215 practices have network connections to their premises; 150 of these have their clinical systems connected to the network and the engineering work to allow their systems to communicate with the network is complete; some 70 practices have been trained in using network pathology results.

The GP ICT Modernisation Project has funded the Payment Calculation and Analysis System (PCAS) which will calculate and manage the quality payments aspect of the new GP contract. PCAS will perform its first live run in March when disease prevalence will be calculated for the disease groups used in the Quality and Outcomes Framework.

The first payment run will take place at the end of April. The procurement and implementation of the new system has meant additional work for the small team taking GP ICT forward and has contributed to delays in the rollout of the other elements of GP ICT Modernisation.

4.3. Picture Archiving and Communications Systems - PACS

The Chief Medical Officer chairs a Northern Ireland PACS project, NIPACS, to complete the analysis and procedural work that should lead to introduction of an HPSS-wide digital imaging service. The NIPACS project was formally launched at a conference held in November 2004.

The project team has been working on the Business Case, investigating procurement options, gathering information from trusts on benefits, consulting on the Output-based Specification and communicating with local PACS contacts.

4.4. Theatre Management Systems

Belfast City Hospital has agreed to take the lead in a collaborative project to acquire a Theatre Management System for use across the HPSS. The Department has written to all Chief Executives informing them of this.

The BCH-led project, with involvement from other trusts, will take forward a region-wide Business Case while at the same time developing the product specification.

Procurement exercise is expected to begin in June 2005 and should be complete by December 2005.

4.5. Cancer Chemotherapy Prescribing

This project will allow all Cancer Units to use a central chemotherapy prescribing system, sharing data and promoting quality standards and consistency in chemotherapy prescribing. The existing Clinical Oncology Information System is to be introduced in each of the Cancer Units.

The core system has been installed in all of the Cancer Units and the "continuous patient record" element of the system, together with interfaces to Laboratory and Radiology systems, is beginning to be used by other clinical professionals, chiefly the Oncologists.

The system will be interfaced to laboratory and radiology information systems in each of the Cancer Units over the new few months.

4.6. Electronic prescribing in hospitals

Most GP practice systems are capable of providing intelligent support for prescribing in general practice. The HPSS ICT Strategy refers to the introduction of electronic prescribing support in hospitals, setting it as a longer-term project largely because of the scale of behavioural change required.

Consultation on the Strategy suggested that for many reasons (the most significant being patient safety, risk management, clinical governance and cost control) the HPSS should move more rapidly to explore the implications of electronic prescribing and, subject to approvals and funding, begin implementation.

The Department's Chief Pharmaceutical Officer has agreed to take forward initial work to identify and evaluate options for electronic prescribing in hospitals, including review of hospital pharmacy ICT.

4.7. Cervical Screening and Cellular Pathology

A Business Case for the replacement of the current ICT systems for Cervical Screening and the associated Cellular Pathology services has been submitted for appraisal. The recommended option would involve implementing the screening element of the Exeter system installed in the CSA as part of the Health and Care Number project and extending the Cellular Pathology system currently used in the Belfast Link Laboratories to all other relevant locations.

In addition to the operational benefits, this option would deliver a complete, integrated, regional cellular pathology record - one component of the overall Electronic Care Record.

The Exeter Registration System went live in the CSA in July 2004. Resource restraints in the NHS Information Authority have delayed the planned go-live date for Cervical Screening to June 2005. In the meantime the patient data, diagnostic codes and GP codes in the "old regional system" and the Belfast Link Labs Histopathology & Cytopathology system are being cleansed.

The plan to replace the Cellular Pathology system with the system used in Belfast Link Labs is under review due to supplier mergers, further complicated by the implications of contracts placed for NHS England as part of the National Programme for IT.

4.8. Regional Laboratory ICT Modernisation

A project to consider options for the future provision of laboratory ICT services was set up in 2002. A Strategic Outline Case has been approved by the Programme Board. The Programme Board emphasised the need for this project to be fully compatible with the more general review of Pathology Services.

An Outline Business Case has now been developed by a regional collaborative project and will be submitted to the ICT Programme Board and the Department's Business Case Unit for appraisal in March 2005. The project board will suggest that, subject to approval of the case, the Programme Board should set up and resource a new project to procure a replacement for the current systems and oversee implementation.

4.9. Basic ICT for Care Professionals

The objective of this project is to introduce a step increase in the number of care professionals who have access to basic ICT services - a PC with desktop services and Internet access. There is a large PC population in the HPSS (around 20,000), but these are often located where access to existing ICT systems is required or in administrative areas.

To date, £1.8m has been allocated to trusts under this heading. Although it is recognised that this is not sufficient to bring ICT to all care professionals, Trusts report significant numbers of new users having access to basic ICT services and receiving ICT training as a consequence.

4.10. Health and Care Number (HCN) Project

This project has allocated a new Health and Care Number for each person who has contact with care services and will ensure that it is used in key HPSS ICT systems that store personal data. The HCN is a unique 10-digit number - similar to the "New NHS Number" recently introduced in England and Wales.

The project is providing secure broadband connections for all GP practices (subject to availability). Equivalent services have already been provided for GPs in England, Scotland and Wales.

The HCN and services put in place by this project will allow demographic data to be communicated and shared securely, reliably and confidentially and will make it possible for data from different parts of the HPSS to be brought together as an electronic care record.

The CSA Family Practitioner Services system that manages patients' registration with GPs has been replaced by the "Exeter System" used by English Health Authorities. This has management information tools and support for electronic links with GB Health Authorities, offering opportunities to modernise a number of important business processes in the CSA.

Rollout of HCN services across the HPSS will take two years; implementation includes:

- ◆ software design and development;
- ◆ hardware for the central HCN service;
- ◆ communications and data centre;

- ◆ software licence and modification for HPSS systems and for GP practice systems;
- ◆ “data cleansing” in the CSA, the HPSS and GP practices;
- ◆ staffing at the centre and in Trusts.

The project is well into its implementation programme and is still ahead of schedule and within budget. Seven of the Key Implementation Milestones have been achieved.

The NHS Information Authority has successfully implemented their Exeter application in the CSA; it went live in July 2004. The HCN application was populated with data and also went live in July.

215 practices have been connected to the GP network. Preparatory work is well under way with the Pathfinder Trust (Ulster Community and Hospitals Trust) to introduce the HCN in Secondary Care.

A Primary Care HCN Forum has been set up to help the Project engage with practice managers on planning and implementation. Pathfinder practices are being identified for data synchronisation exercises and to introduce electronic registration.

All Trusts have begun awareness programmes. Some have shown a significant increase in the quality of their demographic data through use of a prototype HCN application.

A public awareness exercise is being developed.

4.11. Server Consolidation - towards the ECR

This project is replacing the obsolescent Unix server base (106 computers) with a dual, centralised configuration located on the BCH and RGH sites, achieving two major aims.

- ◆ To modernise the server base for the majority of clinical and administrative systems in the HPSS;
- ◆ To move the data held on those systems to a single location; bringing together the distributed data is a key step towards an integrated electronic care record for the HPSS.

The consolidated configuration means that HPSS ICT is effectively independent of organisational boundaries and organisational change.

There are significant operational benefits from this project, including improved resilience, contingency against system failure and some small reductions in operational system staffing across a large number of organisations.

The new shared system is a key element of the ICT Programme. Bringing together all data for many functional areas across the HPSS, it will facilitate initiatives to collate and share data across professional and organisational boundaries.

To maximise the benefits, all current and future ICT will be required to operate on the shared system. Any deviation from this principle would need a very high level of justification founded on unique business need and would have to be approved by the Department.

All BCH, Ulster, Altnagelvin, Westcare-based and United Hospitals systems have now been transferred. The total number of registered users is now 16,451.

The project is on target for completion of all migrations by early December 2005.

4.12. Infrastructure Strategy

The HPSS is becoming increasingly dependent on ICT services. The ICT Programme requires a technical infrastructure capable of delivering the services needed by each project. These services include:

- ◆ Network services;
- ◆ Data storage;
- ◆ Desktop services;
- ◆ E-mail services;
- ◆ Integration services.

One of the key issues for all of these services is that they must be delivered securely for all users, irrespective of their location; so network services includes wireless and remote connections, desktop services includes equivalent services to portable devices.

All of these services must be resilient and must have support mechanisms in place that are able to deliver the required levels of service. They must also meet required levels of network and device security.

The mechanisms for effective management of the HPSS infrastructure must reflect the increasing dependence of the HPSS on ICT and must cover critical areas including: service management, change management, configuration management and release management.

The draft project brief is now complete and being reviewed. The project brief will describe the scope of this project. The next step will determine how best to take forward the project in terms of resources and funding. Initial planning should be complete by the end of March 2005.

4.13. Secure remote access

A number of HPSS organisations have expressed the immediate need for mobile computing facilities to support peripatetic staff and the requirement to deliver access to information wherever and whenever it is required.

DIS commissioned a study to assess possible solutions for the delivery of a secure remote access service for the HPSS. The aim of the study is to identify a secure means by which staff can connect remotely to both regional and locally based applications and office systems such as email and to consider how sensitive personal and other business information can be securely stored on end-user devices such as PDAs and laptop computers.

The findings of the study report, received in January 2005, have been presented to the HPSS Security Officers' Forum.

Standards for encryption of information stored on end-user devices (such as PDAs) have been issued:

http://hpssweb.n-i.nhs.uk/dis/secure/Standards/Standards_Index.htm

DIS is organising pilots for secure remote access to explore issues relating to:

- ◆ secure web sites;
- ◆ virtual private networks (VPN) using existing broadband connections;
- ◆ connection to the HPSS network using mobile devices; and
- ◆ use of "thin client" technology as a means of providing secure dial-in.

The "secure web sites" pilot is completed to the extent that the technologies involved can be rolled out. VPN broadband is still in pilot but looks very successful and plans are to extend the rollout of this after March 2005. Mobile device and thin

client pilots are ongoing. The outcomes and current status of all of these pilots will be presented at a Security Officers' forum to be held in March.

4.14. Public Sector Broadband Services

The HPSS has in place a wide-spread, private, secure, high capacity data communications network. Many other elements of the public sector have similar networks across Northern Ireland.

A project to consider options for meeting the demand for broadband services in the Northern Ireland public service concluded that significant cost savings and other benefits could be achieved through working together.

HPSS demand represents a key element of the public sector demand. A team to take forward detailed analysis of options has been set up in the Department of Finance and Personnel. DHSSPS is represented on the Project Board. The project's early work will include exploring in detail the practical options for aggregation of demand and management of a consolidated broadband service.

An Outline Business Case setting out the options for aggregation of broadband services is being developed.

4.15. Electronic Prescribing and Eligibility System - EPES

EPES is an "Invest to Save" project through which claims for exemption from prescription charges on the basis of being in receipt of a qualifying Social Security benefit will be automatically (electronically) validated against Social Security computer records. A pilot undertaken with the help of the Social Security Agency has confirmed the feasibility of the project and the Business Case assumptions.

Cross-referencing of exemptions with the Benefits Agency Matching Intelligence & Data Analysis Services (MIDAS) is now ongoing on a semi-automated basis while a fully automated system is developed and implemented.

Following expressions of interest and replies to a pre-qualification questionnaire, five companies have been listed for further involvement in the procurement.

An Output-Based Specification of Service Requirements was issued in October 2004. Responses from the potential suppliers were received in January and will be evaluated, leading to a short-list that should be published in March.

4.16. Business Systems Review

A programme of three projects was established through the Strategic Finance Forum to analyse options and develop Outline Business Cases (OBCs) for the future provision of ICT services to support:

- ◆ Finance and Supplies;
- ◆ Personnel and Payroll;
- ◆ Family Practitioner Accounts Payable.

Work was undertaken largely by external consultants and staff seconded from the HPSS. Following widespread HPSS consultation on the first two OBCs they have been updated to take account of feedback and submitted to the Department for formal appraisal. The OBC for Family Practitioner Accounts Payable will shortly go through a similar process.

It will be necessary to consider issues of relative priority and funding in the Department and with the HPSS. There is, currently, no funding available to take the project beyond OBC.

A procurement strategy is being developed involving DIS and representatives of the Office of Government Commerce (OGC), the Central Procurement Directorate (in DFP) and RSS.

While procurement will be a major strand in taking the project(s) forward, there are other activities that need to be progressed in parallel (and, in some cases, can begin in advance). These include addressing coding and reporting requirements, reviewing, rationalising and standardising business processes as part of the preparation for sharing services, building skills and capacity, communication and establishing a benefits realisation process. Deciding how these should be addressed will be an integral part of planning for the next phase.

For Project 3 (Family Practitioner Accounts Payable), documents are being prepared to facilitate communication with stakeholders. The OBC needs minor adjustment before it can be submitted to the Department for appraisal.

4.17. ICT Training

The HPSS ICT Training Group is a sub-committee of the Programme Board.

The Training Group has set up an agreement with the NHS Information Authority to allow HPSS staff to use their portal for European Computer Driving Licence (ECDL)

training and testing. Further information on access to and use of the ECDL portal is being prepared by the ICT Training Group.

The Training Group have issued a prospectus to potential training suppliers; this should lead to agreement on a specific HPSS Prince 2 training package with particular emphasis on benefits identification, management and realisation. This will include both Foundation and Practitioner courses.

The Group arranges Leading Edge Seminars that run every month from October to May. The current series of seminars is on the theme of improving care through ICT.

A half-day training conference on Thursday 17 February, 2005, "Learning in a Connected HPSS" covered a number of topics including the importance of learning to the ICT Programme, the importance of the ICT Programme to learning and the introduction of ECDL.

4.18. Ongoing operational support

Essential support and maintenance for current operational ICT systems across the HPSS and for the HPSS data communications network continues satisfactorily. Services are provided by DIS, the HPSS and the private sector. Although not part of the developmental aspects of the ICT Programme, ensuring that the existing ICT continues to meet essential business needs represents a substantial ICT commitment for the HPSS and DIS. It demands significant resource, and involves much more than simply keeping the systems working.

For example, HPSS finance, personnel and payroll systems have recently been substantially modified to meet new requirements generated by Agenda for Change (AfC). This is a new national agreement on pay and Terms and Conditions of service. It is part of the wider NHS Modernisation Programme and is designed to deliver a variety of benefits for staff and service users by enabling a more flexible and responsive service.

AfC has been introduced in twelve "early implementer" sites in England and four pilot sites in Scotland. Aspects of AfC have been updated in the light of experience from these.

Systems impacted by AfC include the HRMS Pay Office, Personnel, Nursing and Decision Support systems, the Central Payroll, Budgetary Control and General Ledger. The HRMS and Payroll systems in particular required substantial change; in fact more than was required to make them Year 2000 compliant.

As there would not be time between final agreement on AfC and its implementation, a lot of “speculative development” was required, based on the best information available at the time. Unfortunately this meant some re-working as actual requirements became clear.

Facilities were provided to enable users to do as much preparatory work as possible as far in advance of the go-live date as practical. This meant amending the systems to be able to handle both the old and new arrangements. “Shadow” databases, to reflect the post-AfC situation, had to be set up alongside the live environment. Additional data capture programs to “pre-load” these with the large volume of AfC data changes that will result from the assimilation process (which will follow the job evaluation and job matching exercises) also had to be written.

Altogether, this work establishes a sophisticated solution for the HPSS. It allows data to be “pre-loaded”; dummy/parallel runs to be performed and results to be checked; and effectively automates data migration to the live operational systems when required. This is in marked contrast with the GB early implementors which relied on pay offices processing the numerous updates required within a short window between live payroll processing cycles.

Based on the current understanding of the requirements of AfC, system developments to support these are on (and in the case of some speculative developments, are ahead of) schedule. DIS continues to work with the Department and the HPSS to respond to ongoing changes in requirement and refine the system solutions accordingly.

5. PROJECTS BEGINNING THIS YEAR

5.1. Northern Ireland Electronic Care Records

One of the key themes of the HPSS ICT Strategy is the introduction of an electronic care records service operating across the HPSS.

The ICT Strategy Report includes the following:

“To achieve an electronic care record it is necessary for the data to be created in electronic form, typically through use of ICT at operational level. At present, for example, there are elements of electronic care records held in ICT systems in various different locations:

- ◆ general practice systems;
- ◆ community systems, with more extensive coverage anticipated through introduction of new Person-centred Community Information Services;
- ◆ hospital systems - patient administration, clinical specialties, pathology, radiology, accident and emergency and others.

The scale of the HPSS and the use of common systems offer opportunities for an innovative approach to electronic care records. In effect, the combination of developing care records within all organisations, increasing use of HPSS-wide specialist systems, consolidation of ICT, the Health & Care Number, and the use of common systems creates a virtual electronic care record.

Developments across the NHS should be reviewed in 2005 when experience of implementing the Integrated Care Records Service becomes available.”

ECR Foundations

Across the HPSS there are many implementations of common systems: Patient Administration Systems (PAS), pathology, radiology, child health, social services, finance, supplies, pharmacy, accident and emergency..... Each Trust that has these functions has implemented the common system to support it.

In hospitals, the PAS is the primary system for all basic patient data. Other hospital systems link with the PAS using locally-unique identifiers to share basic data including patient demographics and administrative data.

GP Practices have ICT systems from a relatively small number of commercial suppliers.

This is a generalised picture; there are of course one or two gaps and eccentric installations.

Projects in the ICT Programme build on this historic consistency and when they are followed to their conclusion most of the care data across the HPSS will be held in electronic form.

Together with policy statements requiring care data to be held on the consolidated server configuration, the outcome will be delivery for the HPSS of an information and ICT platform comparable to the core of the English Integrated Care Records Service

ICT Programme - steps towards the ECR

Current and planned initiatives will bring us to the stage where much of the care data in the HPSS will be managed through ICT. Future developments will further reduce the paper element. That creates the potential for the care data to be available to those who need it, where and when they need it, to support their professional activity - the right information, for the right care, right here and right now.

The ultimate objective is that the user needs only to be concerned with what is on the screen and sees a unified service. What happens in the background is managed by the system that is most appropriate to the function, but relevant care data is presented to the user with a fully consistent look and feel.

There are many issues surrounding authorisation and consent to be worked through on the way. Securing satisfactory resolution to these issues is fundamental to the success of electronic care records.

Recognising these qualifications, many elements of the ICT Programme contribute directly to delivery of the HPSS ECR:

- ◆ Replace distributed computers in the HPSS with a big regional centre - Server Consolidation (under way);
- ◆ Make sure the Health & Care Number (HCN) is used across the HPSS (under way);
- ◆ Make sure that those who deliver care are able to access ICT when and where they need to - links to GP Practices and to more care professionals (under way);
- ◆ Introduce HPSS-wide ICT services for more care networks - for example, community services through PCIS, diabetes, neurology, nephrology, cardiology, oncology, PACS (some under way);

- ◆ Introduce robust e-mail services (under way);
- ◆ User authentication (under way);
- ◆ Planning and requesting services (some under way);
- ◆ Training for care professionals (partially under way);
- ◆ Enhance infrastructure and support services (under way);
- ◆ Provide “look-up” service across organisational and functional boundaries (future);
- ◆ Consolidate functional data into regional databases (future);
- ◆ Integrate access to data with care planning and administration (future).

Next Steps

Although future steps were described in the ICT Strategy, it also included a commitment to review, in 2005, the approach to development of an ECR, so that experience elsewhere could be considered and, if appropriate, applied here. The Programme Board has therefore agreed to initiate an ECR Review to:

- ◆ Assess current developments and plans here, in the rest of the UK, and in Europe (possibly beyond);
- ◆ Investigate benefits, demand, drivers, imperatives, service development pressures, constraints;
- ◆ Review consent, authorisation, sharing, and access developments here and elsewhere;
- ◆ Develop and secure agreement to a revised roadmap to a Northern Ireland Electronic Care Record setting out the required actions, resources and responsibilities across a range of areas (the least of which is likely to be the ICT requirement).

5.2. Comprehensive ICT Strategy for Primary Care

The current programme includes significant modernisation of GP ICT and a number of initiatives to exploit their new ICT and network connections. It does not, however, specifically address the functionality of GP ICT or the increasingly apparent need for its closer integration with the HPSS ICT.

The overall strategic framework for Primary Care is at an advanced stage of development. Amongst much else, the strategic framework includes proposals to review and evaluate ICT needs across primary care services and to develop a primary care ICT strategy and investment plan to modernise systems in support of primary care providers.

5.3. HPSS ICT Infrastructure

The initial infrastructure project brief referred to above includes definition of work packages to address the ICT infrastructure required to support the ICT Programme over the next 5-7 years. The work packages would review and develop recommendations relating to:

- ◆ The capacity, resilience and performance management of the HPSS wide area and local area network structures and the connections between the HPSS and the Internet;
- ◆ HPSS data storage and backup requirements;
- ◆ Security including:
 - ◆ Internet connectivity;
 - ◆ Single sign-on;
 - ◆ Boundary security;
 - ◆ Public Key Infrastructure and Encryption;
 - ◆ Secure remote access;
 - ◆ Medical Device security;
 - ◆ Mobile device security;
 - ◆ Anti-virus;
- ◆ Desktop renewal and management;
- ◆ E-mail and windows servers;
- ◆ ICT service management;
- ◆ Integration services.

5.4. HPSS ICT Skills and Resources analysis

In 2004 the Programme Board commissioned an ICT skills audit to gather and present an analysis of the current ICT staffing levels across the HPSS. This determined, for each HPSS organisation:

- ◆ How many staff are employed specifically in ICT-related duties;
- ◆ The range and specific nature of such duties;
- ◆ The grades/levels of staff involved;
- ◆ The skills and experience required and available.

The study reported a total of 253 ICT staff in the organisations covered providing support services for 35,980 users of 23,707 “desktops”.

There was a fairly consistent pattern across most organisations of a need for further skilled resource in the areas of desktop, server and network support.

There were requirements for new skills not currently available in the organisation, or in very limited supply, including the areas of security, risk management, web services, project management, business case development, service management, procurement and contract management.

The next stage of this work will seek to quantify the future demand and present options for the delivery of the skills and resources required to support the increasingly ICT-dependent HPSS.

6. PROGRAMME TIMETABLE

The table that follows sets out the current projected timetable for key elements of the Programme.

For projects that are already under way the information is taken from their current project plans.

Dates for projects that are beginning in 2005 are best estimates, to be confirmed as the projects complete their initiation stage.

HPSS ICT PROGRAMME - SUPPORTING TARGETS

Target	When	How Much	Where
Access to a PC for all care professionals including e-mail, internet and desktop services	By end of 2008 By end of 2010	100% 100%	Community Across HPSS
Basic ICT services for all GP practices (mail/internet)	By December 2005	100%	Primary Care
Technology in place to facilitate Remote Access	By end of 2006	100%	Acute, Community and Primary Care
Remote Access - those who require it will have technology available at the point of need	By 2010	Those who require it	Acute, Community and Primary Care
Broadband access available from every PC	By end of 2005	100%	Acute, Community and Primary Care
Access to community services core e-care record	By end of 2008	100%	Community
Widespread use of e-systems for referral and bookings to community services	By end of 2008		Community
GPs engaging in and using available technology	By end of 2005	100%	Primary Care
Access to Pathology and PAS data	By March 2006	100%	Primary Care
NIPACS - agree contract and begin implementation	By March 2006		Across HPSS
Access to digital images	By end of 2007	As required	Acute and Community
Theatre Management Systems	From March 2006		Acute
Health & Care numbers on all key systems	By March 2008	100%	Acute, Community and Primary Care
All systems on one consolidated server bringing e-care data together - making it more secure, available and accessible	By end of 2005	100%	Acute, Community and Primary Care
E-mail directory to support Infrastructure services	By end of 2005	100%	Acute, Community and Primary Care
ICT Support for the discharge process	By end of 2008		Acute, Community and Primary Care
Life-long Electronic Care Records	From 2010		Acute, Community and Primary Care







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