



United Kingdom

Health services in the United Kingdom

Each of the four constituent countries of the United Kingdom (England, Scotland, Wales, and Northern Ireland) has its own, separately administered health service. All are publicly funded and branded as the “National Health Service” (NHS) offering broadly the same range of services – it is essentially the administrative arrangements that are different. The four health services operate independently, but there is close cooperation and collaboration to ensure that all citizens receive the same quality of care.

The NHS in England is the responsibility of the Department of Health. NHS Connecting for Health is an integral agency of the Department of Health that is responsible for delivering the National Programme for IT for the NHS in England. The Department of Health is also part of the UK Government and is responsible for representing the UK internationally in health matters, liaising with the other “home countries” as appropriate.

The NHS in Wales is the responsibility of the Welsh Assembly Government. The Welsh Assembly is a devolved administration that draws its authority from the UK Parliament and has responsibility for a number of issues, including among others health. “Informing Healthcare Wales” is the National Programme for NHS Wales to develop new methods, tools and information technologies to transform health services for the people of Wales.

The NHS in Scotland is the responsibility of the Scottish Executive. Scotland has its own Parliament and Executive again formally drawing its powers from the UK Parliament, and with devolved responsibility for health and other matters. Scotland has its own eHealth strategy administered by the Scottish Executive Health Department.



The NHS in Northern Ireland is a little different from the other UK health services in that it has a combined health and social care administration. The Northern Ireland Assembly and Executive are currently suspended, but Northern Ireland retains its own distinct administration under the Northern Ireland Office of the UK Government. Health and social care in Northern Ireland comes under the Northern Ireland Government Department of Health, Social Services and Public Safety with its own eHealth strategy.

England

Strategic perspective

The UK Department of Health is responsible for the overall eHealth policy of England. Regionally based Strategic Health Authorities are responsible for coordinating and performance managing the progress of local National Health Service (NHS) bodies. Each of the other devolved administrations of the UK (Scotland, Wales and Northern Ireland), has their own equivalent bodies.

NHS Connecting for Health is the agency of the UK Department of Health responsible for delivering the National Programme for IT (NpfiT) in England. The NpfiT, launched in 2002, is one of the largest public sector health IT projects in the world and aims to provide authorised access to patient information whenever and wherever it is needed. Its stated objective is to implement an "integrated IT infrastructure and systems for all NHS organisations in England by 2010", which enables patients to make informed health choices and which increases the efficiency and effectiveness of clinicians and other NHS staff. NpfiT aims to achieve these goals by:

- creating a NHS Care Records Service (NHS CRS) to improve the sharing of consenting patients' records across the NHS and also provide patient access to their own health records,
- making it easier and faster for general practitioners (GPs) and other primary care staff to book hospital appointments for patients,
- providing a system for electronic transmission of prescriptions,
- ensuring the NHS IT infrastructure can meet its current and future needs for broadband connections and network services.

Legal regulations exist in the area of data protection (1998), telecommunications (in regard to data protection and confidentiality, 2003) and digital signatures (2005). The Information Commissioner's Office has the overseeing authority in this regard.



Implementation perspective

Major infrastructure elements of the Programme are in place; as well as the national systems, over 12,000 local systems are in place serving well over 250,000 NHS staff. While eHealth infrastructure is provided by the NpfiT, the delivery of benefits depends on the ability to integrate local NHS systems with the NpfiT infrastructure. Online dissemination activities take place through the websites of the Department of Health and NHS Connecting for Health, and through promotion in person at public conferences. The Programme has also featured frequently in the press.

Some of the main achievements to date include:

- Electronic Transmission of Prescriptions (now the Electronic Prescription Service - EPS) was delivered by the end of December 2004 as an enhancement to the NHS Care Record Spine. After integration testing, live operations commenced on 11 February 2005 with the first compliant GP and pharmacy systems. To date over 6.5 million electronic prescriptions have been issued (out of a total of some 370 million prescriptions issued per year).



- More than 1.3 million hospital appointments have now been booked electronically at a rate of 10,000 a day and rising accounting for over 20% of NHS referrals for treatment.
- The Picture Archiving and Communication Systems (PACS) went live in 2005 with the first images being transferred through the network in March of that year. 56 new Picture Archiving and Communications Systems (PACS) systems are now live and more than 80 million digital images have been stored, benefitting over 3 million patients per year.
- Implementation of the New National Network (N3) began in April 2004. When complete the NHS network will be one of the largest Virtual Private Networks (VPN) in the world. More than 15,000 NHS locations are connected already. All NHS sites are planned to be connected by March 2007.

Success has been measured by NHS Connecting for Health deployment statistics, which show as of 6 November 2006:

- 287,713 users registered for access to the Spine
- 6,554,406 prescriptions transmitted using the EPS
- 1,607,267 Choose and Book bookings
- 83,858,413 images stored using PACS
- 15,894 National Network (N3) connections
- 210,777 registered NHSmail users

The initial components that went live in July 2004 included:

- the Personal Demographic Service (PDS) containing identity details of over 48 million patients,
- the Messaging Service (TMS) handling 220 million messages on an annualised basis,
- access controls to ensure that only authorised access points and authorised personnel can connect to the live services,
- the Choose and Book facility to allow GP Practices to book appointments for their patients at particular hospitals.

Future activities

Healthcare reform is high on the policy agenda, and eHealth activities are recognised as a key necessary component. However, the goal to provide an integrated IT infrastructure and systems for all NHS organisations in England by 2010 continues to present significant challenges. The National Programme for IT is a large, complex programme within the NHS, one of the world's largest organisations, itself undergoing radical change to deliver better healthcare for people. A key challenge is to introduce modern information technology and the business changes necessary to exploit it fully without impacting the safe delivery of care. The Programme has set ambitious and challenging targets to deliver systems to provide defined benefits and believes it is better that there should be delay to implementation of a system to get it right for patients and clinicians, rather than to deploy it rapidly and get it wrong. Significant focus is also being placed on ensuring that the NHS organisations can and do play a full part in implementing the programme system and can make the best use of the programme's systems to improve services.

Extensive information about the National Programme's implementation plans are available online at <http://www.connectingforhealth.nhs.uk/implementation>.

Core resources

Department of Health

<http://www.dh.gov.uk/PolicyAndGuidance/InformationPolicy/fs/en>

NHS Connecting For Health

<http://www.connectingforhealth.nhs.uk>

Northern Ireland

Strategic perspective

In Northern Ireland the Department of Health, Social Services and Public Safety (DHSSPS) is responsible for overall Health and Social Services policy. Health and Personal Social Services in Northern Ireland are provided as an integrated service. Northern Ireland is currently reforming its public body structures under what is known as the Reform of Public Administration which will result in a single Health and Social Services Authority.

Specifically, the way forward in eHealth and Social Services was determined, agreed and declared in the DHSSPS Health and Personal Social Services Information and Communications Technology Strategy, published in March 2005. The Strategy has two major, interlocking themes for ICT development: Electronic Care Records and Electronic Care Communications. The emphasis of the strategy is on these two themes, but the importance of ICT as a means to access other information and the need to sustain and modernise ICT in other areas is also recognised.

Implementation perspective

Some work is well underway regionally to select specific systems that will support clinical services across Northern Ireland including Picture Archive and Communication System (PACS), theatre services, pharmacy/prescribing and laboratory services. The local solutions do not interfere with the objective for regional solutions, best value and affordability through procurement processes. Other specific project activities include:

- All GP practices in Northern Ireland are now connected to the secure GP network, and most practices have access to a managed e-mail and internet service and to the new electronic pathology results service. During 2006/07, GP systems will be populated with the new Health + Care Number and will be connected to the Electronic Registration system. This will enable all new GP registrations and all changes to patient demographic



information to be transferred electronically between the Central Services Agency and GP practices. The introduction of this new personal identifier across the HPSS will speed up the referral process and will help reduce administration costs. It is also a necessary prerequisite for beginning to build service-wide electronic patient records.

- An Electronic Prescribing and Eligibility System (EPES) is being rolled out over the next two years. Paper prescriptions will be printed at the GP's surgery with a two-dimensional barcode that encodes all of the prescription information. At the Community Pharmacy the 2D barcode is scanned and all of the "prescribed" information (including doctor, surgery and patient details) is captured by the pharmacist on to their system. When the pharmacist confirms what they will and have dispensed, any changes are recorded as "dispensed" information. The full record of the transaction (prescribed information, details of the patient and their method of payment or claim for free prescriptions) is sent by the Community Pharmacist to the central EPES database and used to support their claim for payment of services rendered and check the validity of the patient's claim.



Electronic Care Record: The electronic care record will contain structured data, text and images generated from a variety of sources and accessible wherever and whenever there is a legitimate need to access it. Access will be managed under a strict “need-to-know” regime that complies with agreed rules and procedures for confidentiality and consent. To create an electronic care record, it is necessary for the data to be read in an electronic format, typically through the use of ICT at an operational level. At present, for example, there are elements of electronic care records that are 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; and hospital systems – such as patient administration, clinical specialties, pathology, radiology, accident and emergency, and others.

The scale of the Health and Personal Social Services (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, a single Health and Care Number, and the use of common systems, creates a virtual electronic care record.

Electronic Care Communications: Health and social care processes are familiar to all healthcare professionals who are service users. Almost every contact with the HPSS involves communication between healthcare professionals, between functions, between HPSS organisations, or with other public and private sector bodies. Examples of such contact include: appointments; referrals between care professionals; requests for services and communication of the service outcome; discharge letters and other follow-up communications; and prescribing.

Current ICT systems manage some aspects of these processes, but in most cases only within individual organisations. As a result, communication of care information

in the HPSS today relies on paper. For there to be a shift from paper to electronic communication, more widespread access to ICT is required, and capabilities - that in some cases exist already - need to be made simpler to use and seamless for the user.

Current and future activities

Launched on 9 March 2005, the HPSS ICT Programme identifies, initiates and monitors initiatives and individual projects to achieve the vision set out in the ICT Strategy. In Northern Ireland, Health ICT projects are currently underway in relation to, among others:

- Health and Care Number (HCN)
- Electronic Prescribing and Eligibility System (EPES)
- Person-centred Community Information System (PCIS)
- ICT Training for all healthcare professionals
- Server Consolidation – towards the Electronic Care Record (ECR)
- Regional Laboratory ICT Modernisation
- Public Sector Broadband Aggregation
- Secure remote access
- Infrastructure Strategy
- HPSS Data Warehouse

Core resources

Department of Health, Social Services and Public Safety (HPSS), Information and Communication Technology Strategy

<http://www.dhsspsni.gov.uk/ict-strategy.pdf>

HPSS ICT Programme Summary

<http://www.dhsspsni.gov.uk/hpss-ict-programme-summary.pdf>

Department of Health, Social Services and Public Safety website

<http://www.dhsspsni.gov.uk/index/hss/rpa-home.htm>

Scotland

Strategic perspective

The Scottish Executive Health Department is responsible for overall health policy in Scotland. Its main strategy policy document, *Delivering for Health*, identifies the need for Scotland to shift from its current reactive crisis-management and acute-oriented care mode towards more anticipatory, preventative and continuous care. The strategy aimed at establishing such a comprehensive change in service is built around the practical application of Electronic Health Records (EHR) as a key component of the health information system.

In particular the eHealth strategy aims to achieve convergence over the next five years towards common and mandatory arrangement of IT systems across NHS Scotland which deliver the following:

- personal EHRs ultimately replace paper based records;
- each patient has secure access to their individual EHR;
- health service treatment staff, across the whole NHS, also have access to the EHR of their patients;
- all healthcare professionals are connected to a secure health information network, which supports an integrated community of acute and inter-agency health-care service providers;
- the confidentiality of patient information is maintained, while fully supporting integrated healthcare services through sharing of patient information;
- the data sharing, required for Community Health Partnership between the healthcare service and its partners, is based on a framework of informed patient consent;
- information systems directly support the three core functions of quality service provision: a) assessment of need, b) care planning and co-ordination, and c) evaluation of the quality of care;
- healthcare professionals participate in clinical networks and access best practice information;
- clinical staff record their interventions directly into Electronic Health Records, eliminating 3rd party transcription from written records.



Implementation perspective

The Scottish Executive Health Department implementation is not a “rip and replace” strategy. It is building on existing developments. Progress already achieved includes:

- Picture Archiving and Communications Systems (PACS) have started to be rolled-out in all hospitals;
- the national Emergency Care Summaries (ECS) system contains information on patients’ current medication and allergies for more than 90% of Scottish population; it is also accessible to out-of-hours service staff;
- 99% of General Practitioners can access the Scottish Care Information (SCI) web-based system for laboratory test results (SCI Store);
- over 70% of referral letters, between primary and secondary care, are now sent electronically via secure national electronic transmission mechanisms (SCI Gateway); this system is fully integrated with the GPASS primary care system, enabling GPs to access SCI services on-line.



There is also an expanded NHS Scotland “e-Library” which provides access to over 4000 fulltext electronic journals, over 20 major databases, 200 electronic textbooks and over 1500 free quality health information websites. It caters for the work, research, education and personal development needs of the full range of NHS staff. A single username and password, available via online registration, provides access to these resources.

Future activities

Because there is no single system that covers the Scottish eHealth strategy requirements, the Scottish Executive Health Department expects to buy a number of systems, and the tools to join them up. The first key task therefore is to set out the scope of what needs to be procured to deliver a single national comprehensive set of complementary interoperable systems based on the individual EHR, that together provides (among others) the following minimum functionalities:

- the initial EHR implementation will include an electronic Emergency Care Summary for every consenting patient;
- secure and managed updating facility for individual EHRs;
- Picture Archiving and Communications (PACS);
- electronic prescribing and medicines administration;
- appointment scheduling and clinic management;
- telehealth for remote access to specialist medical services and telecare for support in the home;
- GP computing, with patient databases matching residents of Community Health Partnerships, to meet wider community and primary care needs.

The Scottish Executive Health Department is also establishing a Scottish Centre for Telehealth. The Centre will provide practical help to NHS Boards as they seek to realise the potential of telehealth development projects.

Core resources

Delivering for Health

<http://www.scotland.gov.uk/Resource/Doc/76169/0018996.pdf>

Building a health service fit for the future

<http://www.sehd.scot.nhs.uk/nationalframework/Reports.htm>

Scottish Care Information:

<http://www.sci.scot.nhs.uk/index.htm>

NHS Scotland e-Library:

<http://www.elib.scot.nhs.uk/portal/elib/pages/index.aspx>

Wales

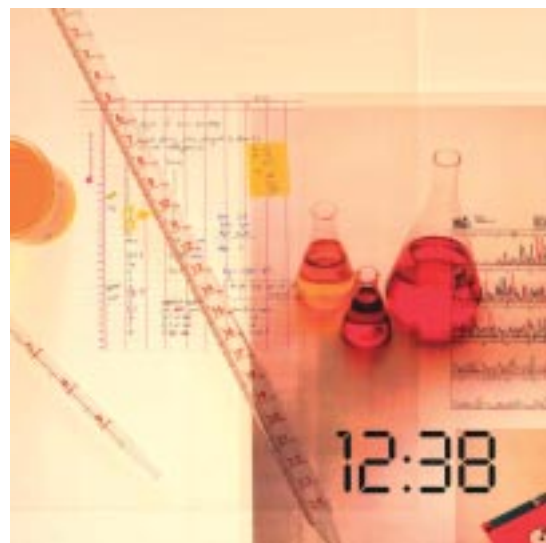
Strategic perspective

In Wales the Welsh Assembly Government is responsible for the overall health policy of Wales, including eHealth issues, as a devolved government within the UK. The Welsh Assembly Government has established several programmes of work to support health policy, and the one with the main involvement in eHealth is Informing Healthcare. This is based on a strategy document published in 2003, and an organisation also called Informing Healthcare has been established to deliver the strategy.

The overall operation of the Informing Healthcare Programme is described in its National Case, published on the website and updated regularly. Its primary purpose is to create a set of information and infrastructure services that enable the provision of integrated, person-based information to be used to join up and improve patient care across the National Health Service (NHS) and social care in Wales. Its strategic aims are to develop the information infrastructure to ensure the NHS in Wales can provide patient care that is continuous and integrated, closer to a patient's home and well co-ordinated. The purpose and aims have been expressed as the following investment objectives:

- Make a shared view of clinical care available across NHS Wales.
- Support and co-ordinate the re-design of working practices to deliver the full benefits of Informing Healthcare.
- Create a "world-class" technical infrastructure so that information can be shared securely irrespective of organisational boundaries.

A key part of the Programme's activity is the engagement of clinical and other professionals. This takes several forms, including workshops and other events that take place across Wales. In addition, as part of the governance arrangements, a National Architecture Design Board has been established. This is a group of experts in health care and ICT design who are brought together to make the collective decisions that are needed to make information systems and services work consistently across the whole service to support individual care.



Implementation perspective

The Informing Healthcare Programme has designed a national architecture which defines the environment for the future provision of the information services in NHS Wales that are directly related to healthcare. It sets out principles and concepts, establishing the architectural context in which information systems and services can be developed to support effective healthcare in Wales. The major elements from this architecture will be:

- An Individual Health Record for each person in Wales, which will make available information of most importance to the overall care of the individual.
- A range of care management information services following a strategy which aims to get from the current diversity of information systems and processes across Wales to a more corporate arrangement that can meet the requirements of current and future health care services, which will increasingly operate across institutional boundaries.



These elements will be delivered via a service oriented architecture which focuses on what the information technology does (service) rather than how it is put together (system). This will facilitate communication between organisations, and will provide common services for communication with other countries.

Two key principles of the Informing Healthcare Programme are to develop incrementally and to build on existing assets as much as possible. The Programme is therefore running several service improvement projects, which aim to explore different aspects of functionality, learn lessons for full implementation and deployment, but also deliver immediate benefits for patients and care professionals. These include:

- A pilot service for out-of-hours services which will provide information not currently available, as the first step towards the Individual Health Record.
- A pilot patient portal, My Health On-Line, available in English and Welsh.
- Projects to explore the electronic transfer of clinical communications.
- Projects for the monitoring of patients in their home.

In addition, Informing Healthcare has provided major investment in improving network facilities and increasing access to IT facilities, supported ECDL training, and provided more comprehensive electronic sources of information (e.g. journals).

Future activities

One of the major activities currently being undertaken is to establish one or more strategic partnerships with suppliers, to assist in the procurement, development, delivery and operation of information services.

The service improvement projects described in the previous section will continue, and it is likely that more will be identified. In addition, the following major activities will be undertaken in conjunction with the strategic partners:

- Roll-out of the out-of-hours pilot to an information service for all areas of emergency care.
- Development of the Foundation Phase of the CMIS strategy, which will make available a shared view of patient information within organisations and provide electronic support for some clinical activities not currently available.
- Put in place mechanisms to share information with other UK home countries, the Republic of Ireland and beyond to support cross-border healthcare.

Core resources

<http://www.wales.gov.uk/>

<http://www.wales.nhs.uk/ihc/>

NHS Wales, Informing Healthcare

http://www.wales.nhs.uk/ihc/documents/ihc_a5-e.pdf