Health and Social Services Committee



HSS(2)-14-06(1a)

Meeting date: Wednesday 11 October 2006 Venue: Committee Room 1, Senedd, National Assembly for Wales Title: Informing Healthcare Implementation Strategy Informing Healthcare Hysbysu Gofal Iechyd

INFORMING HEALTHCARE

IMPLEMENTATION STRATEGY

(Summary of the 3rd Edition of the IHC National Case)

October 2006

Supporting References:

Informing Healthcare Achievements – published May 2006 Informing Healthcare National Case 3rd Edition – published Oct 2006

INFORMING HEALTHCARE IMPLEMENTATION STRATEGY

1.1 Introduction

- 1.1.1 The Informing Healthcare (IHC) strategy was originally published at the end of 2003 and can be summarised as 'a significant and strategic approach to investing in information and communications technologies infrastructure and to modernising service delivery by supporting new ways of working'
- 1.1.2 The Implementation Strategy for the Informing Healthcare Programme, builds on the first and second editions of the National Case, published in June 2005 and January 2006, respectively. It is a working document which is updated approximately every six months.

1.2 Strategic Context for Informing Healthcare (IHC)

The main policy initiatives driving the IHC Implementation Strategy are:

- 1.2.1 "Designed for Life", which describes a number of long term strategic principles and policies around healthcare service improvements for the people of Wales. It defines the priorities for IHC activities which have been shaped to support these aims, specifically in the areas of emergency and unscheduled care, elective care and the management of long term (and chronic) conditions.
- 1.2.2 "Making the Connections", which describes a corporate all-Wales approach to achieving high quality services and efficiency through exploiting economies of scale, throughout the public sector. It defines the operational principles for Informing Healthcare and defines the way in which new information services will be delivered to support patient care.
- 1.2.3 "The Review of Health & Social Care in Wales" (Wanless Report), which states unequivocally that increased, ring-fenced, investment in Information Technology has to be made if improvements in the delivery of healthcare services are to be achieved. The current total IM&T spend in NHS Wales is less than 1% of the NHS Wales annual budget, which Wanless recommended should be significantly increased.

1.3 Informing Healthcare Remit

- 1.3.1 The key strategic aims of the IHC Programme are to deploy technology that provides information to support:
 - I. Continuous and integrated care for patients during their 'journey' throughout the health service and social care.
 - II. Care closer to home for patients, keeping them informed about the progress of their care and supporting information decision making.
 - III. Co-ordinated care so that contributors in the health services are working together for the benefit of the patient supporting the care progress and the tasks that staff perform to improve the safety of services and overall efficiency.

1.4 Where Are We Now?

- 1.4.1 The current situation in Wales is similar to most countries across the world. Specifically:
 - a) Spend on IM&T –an estimated £46 million per annum (1% of Total Budget Health Expenditure in Wales for 2005-06) is consumed on maintaining a platform of Non GP and GP information systems
 - b) Healthcare Informatics Staff there are considerable variations in capacity, resource levels and skill sets across Wales. Many Trusts have strong in-house teams that have successfully implemented local information systems and have invaluable knowledge of clinical processes and excellent relationships with local clinicians. However, there is no critical mass of nationally available informatics skills and expertise and there has been no strategy for informatics professional development and recognition.
 - c) Information Technology information systems and processes operate primarily around the management of organisation and not the care of patients. Many NHS systems remain paper

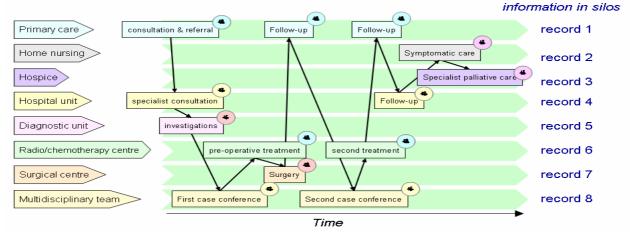
based but where electronic systems exist there is no national technology architecture that will support the secure and reliable sharing of clinical information to support clinicians and patients to make decisions and plans. Fragmented IT systems and processes still require paper records to be maintained by busy healthcare professionals.

d) Policy - the fulfilment of Designed for Life cannot be achieved without the deployment and usage of information technology to directly support the transformation in healthcare services required

1.5 A Snapshot of the Current Situation: Information Systems centred around organisations and not around patients

Information systems in the NHS have traditionally been developed in, and are 'owned' by, local organisations that are responsible for providing healthcare services. Their purpose is to manage and document the detail of the 'caring' by supporting clinical provider tasks such as prescribing. These systems also enable resource management and scheduling as well as documenting in detail the care given to an individual.

Figure 1. A typical patient's journey - Cancer Patients



• This sample cancer patient's journey shows how care is fragmented across multiple care providers

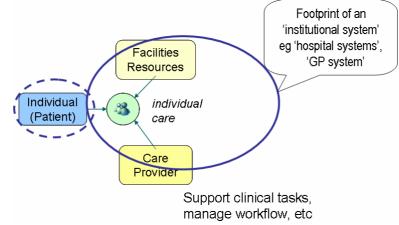
• Each care provider uses a different Care Management System, so the patient's care record is fragmented across multiple record silo's

In the above figure 1, there are 8 separate records (8 information silos) that could be either individually paper based or electronic. When these sub-systems are not integrated, at a local or national level, it prevents the concept of seamless patient care (an inability to share information).

There are three things that clinical and administration information systems must support:

- Care for the individual
- Clinical staff to do their job
- Organisations coordination and management of administrative tasks

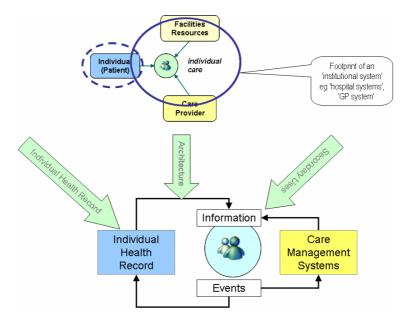
Figure 2 – Components of an Institutional System



Historically, the piecemeal approach to investment and development means that many systems are paper based and those that are electronic have poor capability to share information. This means that communication with the wider healthcare information environment is severely limited. In conclusion, there has been good support for organisations and poor support for patients and staff.

The vision is to create a set of information and infrastructure services that will provide person-based information which can be used to join-up and improve patient care across NHS Wales and with social care – as shown below.

Figure 3 - Vision for Information



To achieve this vision, NHS Wales needs to:

- a) Establish a common, corporate information design and architecture
- b) Define, agree and adopt a national set of information standards for the integration of information systems

1.6 Where Do We Want To Be?

1.6.1 The IHC Programme has agreed the following high level investment objectives after extensive consultation with stakeholders. These were ratified by a 5 day National Conference - involving clinicians and IT specialists in September 2005 - to design and agree an All-Wales Technical Architecture.

a) To make a *shared view of clinical care available across NHS Wales* – creation & delivery of the individual health record (IHR).

b) To create a 'World Class' technical infrastructure so that information can be captured and shared securely irrespective or organisation boundaries – creation of a national technical architecture and infrastructure.

c) To support and co-ordinate the existing working practices and their redesign to deliver the full benefits of Informing Healthcare - delivery of **service improvement** projects that inform future technology development and clinical best practise throughout the service

1.7 How Will We Get There?

- 1.7.1 It is important to understand that the objectives of the IHC Programme will not be achieved simply by letting contracts to procure a single all-Wales computer system at the lowest cost. The delivery of national IT programmes is a highly complex undertaking and requires significant organisational change, continuous consultation with clinicians, sustained investment and a wide range of specialist informatics knowledge and experience.
- 1.7.2 The IHC Programme will meet its objectives by delivering a number of projects within three subprogrammes over the short, medium and long term:
 - a) **The Individual Health Record (IHR)** will contain the information that is most important to assist patients move through the healthcare system, so that the right information is provided to the right people at the right time, wherever care is delivered..
 - b) National Architecture and Infrastructure will make sure that all information systems are available that can capture patient information, support key processes and be able to transfer information to each other which can then be presented to clinicians and patients in real life clinical settings.
 - c) **Service Improvement and Change** deploying new information services that support changes in clinical practice to improve patient care.
- 1.7.3 In order to achieve these objectives within the timescales required to support Designed for Life
 IHC will supplement the existing skills within NHS Wales by procuring a private sector Strategic Partner to fill gaps in capacity and capability.

1.7.4 Stakeholder Engagement

Experience has shown that successful implementation of national IT Programmes requires extensive communication plus engagement of all stakeholders – and this has been a top priority for the IHC Programme. IHC has adopted a range of traditional approaches but its main objective has been to concentrate in the early stages on winning 'hearts and minds' through face to face relationships. Every NHS Trust and LHB is visited at three monthly intervals and IHC has funded project managers in every Trust. Residential stakeholder events have been held to tackle specific issues and to agree solutions by tapping into the expertise and experience of NHS Wales staff. Stakeholder assurance groups have been created for key projects and design decisions. IHC strategic thinking is thoroughly explained, tested and refined locally with clinicians and IT specialists to ensure relevance to real life clinical situations

1.8 International Comparisons

Informing Healthcare has set up an International Advisory Group (IAG). The group comprises experts, leaders and decision makers in health informatics, representing 7 countries from around the world.

- **Canada**: Professor Denis Protti FACMI, Professor, Health Informatics, University of Victoria, Visiting Chair of Health Informatics, City University London, Chair of IHC International Advisory Group
- *England*: Dr Jem Rashbass, Director, Clinical & Biomedical Computing Unit, University of Cambridge School of Clinical Medicine
- **Denmark**: Claus Duedal Pederson, International Manager, Danish Centre for Health Telematics
- **Netherlands:** Johan Beun, Ambassador, The Dutch National ICT Institute for Healthcare (NICTIZ)

Scotland: Dr Kenneth Robertson, Clinical Lead for IM&T for the Scottish Executive

New Zealand: Brendan Kelly, Chief Adviser - Health Information Strategy & Policy, Corporate & Information Directorate, Ministry of Health

Finland: Hannu Hanhijarvi, Executive Director, the Finnish National Fund for Research and Development (SITRA).

The first IAG Conference, which was held in Cardiff in September 2006, was attended by around 100 NHS and WAG delegates. IAG members were invited to contribute, with NHS Wales and other stakeholders, to a public peer review of the Informing Healthcare (IHC) programme's approach and plans. This type of open exchange and dialogue is unprecedented in national IT/healthcare improvement programmes. The IAG commended the IHC Programme on having a sound strategy with the right balance of delivering benefits in the short term coupled with an achievable long term plan, provided investment was sustained. IHC was also complimented on its approach to stakeholder engagement and discussions with delegates highlighted opportunities and ideas for improving future plans and activities. A report of the IAG's findings will be available during October.

2. IHC ACHIEVEMENTS TO DATE (SUMMARY TAKEN FROM IHC ACHIEVEMENTS DOCUMENT PUBLISHED MAY 2006)

The following table (Table 1) describes briefly the main achievements of IHCⁱ over the last 12 months.

Project	:	Description	Delivered	Outcomes
My Online	Health	A web-based portal providing the people of Wales with access to the important information in their own health record.	A pilot maternity portal has been developed with the active involvement of expectant and recent mothers. This, the first prototype of My Health Online, is built in both English and Welsh	Through greater integration the portal could be extended to incorporate the ability to make appointments, correspond electronically, and also provide patients with convenient access to
		The portal will empower individuals by giving them the opportunity to take responsibility for their own health and to access the information they want.	languages.	relevant personal health information.
Improv	-	Develop, deploy and support an application	The pilot project is due to complete in the Autumn	The pilot project will validate the potential
Out of Service	Hours e	for use by clinicians using the Gwent Out- of-Hours Service. The application will be a web-based portal that will allow the clinician to make use of information available through an Individual Health Record Information Service.	of 2006.	benefits for an Individual Health Record. It will also test aspects of the National Architecture.

IHC Objective 1 - Shared View of Care

IHC Objective 2 - World Class Infrastructure

Project	Description	Delivered	Outcomes
Cancer Information Network	Developing improved communication links for the treatment of cancer patients by providing an electronic cancer record (CaNISC) to support patient care across organisational boundaries in Wales	In Spring 2006, CaNISC completed the development of an additional module to support multi-disciplinary teams (MDT). allowing the collection, storing and reporting of Cancer Waiting Times data.	The information held by CaNISC also helps Cancer Networks in their role of performance monitoring the compliance of their trusts in meeting the SaFF targets
Patient Involvement	Committed to patient involvement in IHC projects.	A register of patient groups has been established	The patient groups will help IHC ensure that the patient and carer voice is heard.
		A review of online health information services has been undertaken.	The review of online services demonstrated that all the organisations involved need to address content duplication and inconsistent messaging.

Project	Description	Delivered	Outcomes
		The NHS Wales Web Design Board has been established to work on a national web architecture,	The Design Board has adopted a shared 12- month strategic plan to ensure health information web sites created for Wales are designed with assurance and the involvement of users.
Clinical Knowledge Resources	Enable wider access to a greater number of knowledge tools, resources and information.		Represent a significant set of resources, which will support clinical decision making, evidence- based practice (clinical and management), lifelong learning, research, patient safety and clinical governance.
Equipment	Funding for NHS Wales to purchase PCs and laptop computers to boost existing IT resources.	Since November 2004, has funded an additional 5,600 new PCs and laptops for staff with no previous access to computers. In addition, over 3,700 old PCs have been replaced	NHS Trusts have been able to buy IT equipment from a National Framework Contract and to access funds designed to support local deployment.
Microsoft Enterprise Agreement	A national deal with Microsoft to enable healthcare staff and patients to benefit from the latest desktop and mobile computing software.	In January 2006, Informing Healthcare successfully concluded negotiations with Microsoft for a National Enterprise Licence for Wales.	As part of the deal, the latest Microsoft operating and software licences will be provided for 35,000 computer desktops throughout NHS Wales. This means that NHS Wales is getting the best possible deal for its IT systems and allows local money for patient care to go further.
European Computer Driving Licence	A programme of training to ensure that NHS Wales staff have the IT skills required to ensure they will be able to get the most benefit from new systems and equipment	Informing Healthcare has adopted the European Computer Driving Licence (ECDL) as the benchmark qualification for all NHS staff. From April 2006, the management of the ECDL service was transferred to the National Learning and Innovation Agency in Healthcare (NLIAH).	IHC had adopted the principles of 'best owner' and, as such, continues to work closely with NLIAH, and other partners, to ensure mutual goals and objectives are achieved within the constraints of time and budget.
Tackling record duplication	To reduce duplicate or repeat records - and ones which are contradictory - as these can be an obstacle to effective healthcare delivery.	Over 780,000 records had been processed by July 2006. As a result, duplicate records were down from 4.6% to 1.4% and missing NHS numbers were down from 31% to 13%	Doctors can have a complete picture of the patient medical history and any test results. The patient can be reassured that a trustworthy record is held about their healthcare history
Informatics	Providing national leadership and sponsorship of the professional development of health informatics staff	collaboration with the University of Swansea in	Ultimately this initiative will contribute to the achievement of a professional status for health informatics through professional registration via

Project	Description	Delivered	Outcomes
	across NHS Wales.	The bursary has been extended Wales-wide. It supports a number of NHS staff studying for a Masters degree in Health Informatics.	the UK Council for Health Informatics (UKCHIP).
Care Management Strategy (CMiS)	The National Architecture defines the blueprint for the future provision of information services in NHS Wales	The first edition of the CMiS strategy has been completed and consultation with the service across Wales is now underway. The agreed CMiS Strategy will be launched before the end of 2006.	The strategy emphasises the continuing commitment to make the most effective use of existing resources – both in terms of experience and expertise on the ground and in capitalising on established in-house applications and tools where feasible and appropriate.
Networks	Underpinning all the architecture services is a set of infrastructure facilities. This infrastructure incorporates network services, hardware platforms and service management.	Through investment of over £6m in a range of enhancements to networks and associated services, Informing Healthcare has enabled improvements to be made to networks nationwide - bringing all NHS Wales networks up to a largely common standard.	Informing Healthcare will help NHS Wales to deliver benefits directly to patients, carers and clinicians.
Broadband	Reducing barriers to the delivery of healthcare and of access to health services by patients by improving access.	Informing Healthcare provided £750,000 in February 2006 to enable NHS Trusts to improve connections with their remote community sites, establishing fast and convenient links. A specification for the procurement of a national service has been written with the intention that there will be a full service across Wales before end 2006.	Every NHS Trust in Wales is now able to provide a remote online facility to a number of its key staff. Increasing numbers of staff will have remote access over the forthcoming months and years.
Telehealth	To forge closer links with Social Care so that people can be supported at, or close to, their homes through services that take account of their whole needs.	been improved an upgraded. The Welsh Health Video Service, supported by Health Solutions Wales, has continued to develop. All team members have received training to become Polycom video conferencing engineers.	Through closer links with Social Care people can be supported at, or close to, their homes Services take account of their whole needs.
National Architecture Design Board (NADB)	Establish the National Architecture Design Board (NADB) to provide ongoing governance and strategic direction to the development of the National Architecture.	Informing Healthcare has brought together a group of experts in both healthcare and ICT design. The NADB has agreed and approved the approach that will be taken to control use of the Individual Healthcare Record (IHR).	The NADB will make the necessary decisions to ensure that new systems work to support individual care consistently across the NHS in Wales.

IHC Objective 3 - Enabling Change

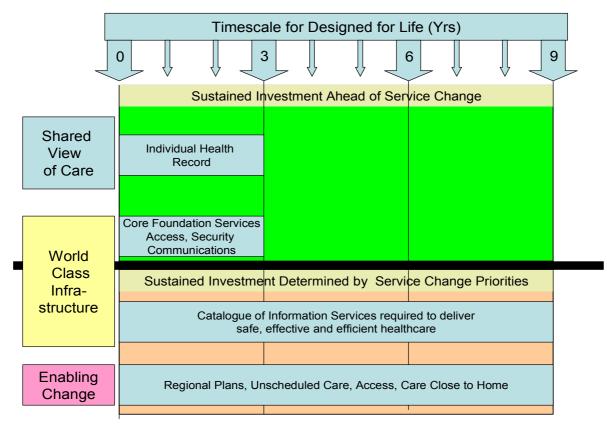
Project	Description	Delivered	Outcomes
Remote Glucose Testing	A research project designed to define the impact of remote monitoring of blood glucose. Working in collaboration with the Diabetic Research Unit of the University of Cardiff, the project covers 200 patient volunteers who have uncontrolled diabetes.	to the patient's telephone line and readings are automatically transferred from the meter reading to a contact centre where two diabetes nurses are	Patient involvement in the project team has helped to determine the best choice of system to implement, which is now delivering accurate detailed readings.
Map of Medicine	To negotiate a national contract on behalf of all NHS Wales organisations for the use of the online clinical pathways tool Map of Medicine [®] .	licence for the Map of Medicine to be made	This resource will provide clinicians with a useful knowledge tool to support clinical decision making and patient care. It will be evaluated over the coming year to establish and demonstrate its potential.

3. INFORMING HEALTHCARE FRAMEWORK FOR DELIVERY

The Overview of the IHC deliverables (Figure 4) below, demonstrates the following:

- Key deliverables and milestones
- Time Scales for Delivery:
 - Short term (0-3 yrs)
 - Medium term (3-6 years)
 - Long term (6-9 years)

Figure 4 – Overview of IHC Deliverables



- **Above the Line** the individual health record and core foundation services which represent the up-front investment in NHS Wales infrastructure before future investment service delivery areas can be optimally realised
- **Below the Line** 'catalogue of information services' which are required to deliver safe, effective and efficient healthcare sub programmes and projects Typically these will include services to support common healthcare processes such as requesting and viewing investigations, management of medicines and clinical communications between NHS staff.

Note: 'Above the Line' indicates the required sustained investment needed ahead of ongoing sustained investment in service change ('Below the Line').

3.1 Sub Programmes and Projects

Within the IHC Programme three sub-programmes have been established and, within each of these, there are a number of areas of work which will be delivered through a series of projects.

3.1.1 Individual Health Record (IHR) - Sub Programme

The IHR sub-programme will deliver projects within the following areas of work (see figure 5).

Figure 5 - Shared View of Care - Deliverables

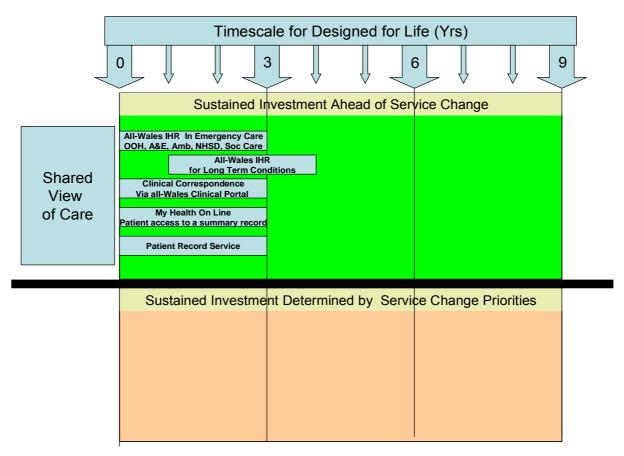


Table 2 below provides a brief description and time scales for each of the main deliverables within the sub-programme above

 Table 2 - Shared View of Care- Deliverables and Time Scales

Deliverable	Description	Time Scales
All-Wales Individual Health	Make available an individual health record (which is a	Short-term-
Record in Emergency Care,	summary of every patient's important basic health	0 to 3 years
Out-of-Hours, Accident &	information), derived from their GP's system and	
Emergency, Ambulance and	available securely throughout Wales in the following	
Social Care	emergency care settings; Out-of-Hours, Accident &	
	Emergency, Ambulance, NHS Direct & Social Care	
All-Wales Individual Health	A web based portal that will allow the clinician to	Short to Medium
Record for Long Term	make use of information available through an	Term-
Conditions	Individual Health Record Information Service	1 to 4 years
Clinical Correspondence via	Make available a single view of clinical	Short-term-
all-Wales Clinical Portal	correspondence, test results and events, derived from	0 to 3 years
	local clinical systems and provided locally through a	
	common all - Wales clinical portal	
My Health on-Line (Patient	Make available a summary patient health record that	Short-term-
access to a summary	gives patients the ability to control and view their	0 to 3 years
record)	information securely on-line and supports self	
	management	
Patient Record Service	A standards based information repository that	Short-term-
	consolidates data from a variety of different sources	0 to 3 years
	into a single patient record within a particular	-
	healthcare setting	

3.1.2 National Architecture and Infrastructure Sub-Programme

The National Architecture and Infrastructure sub programme will deliver projects within the following areas of work (see figure 6).



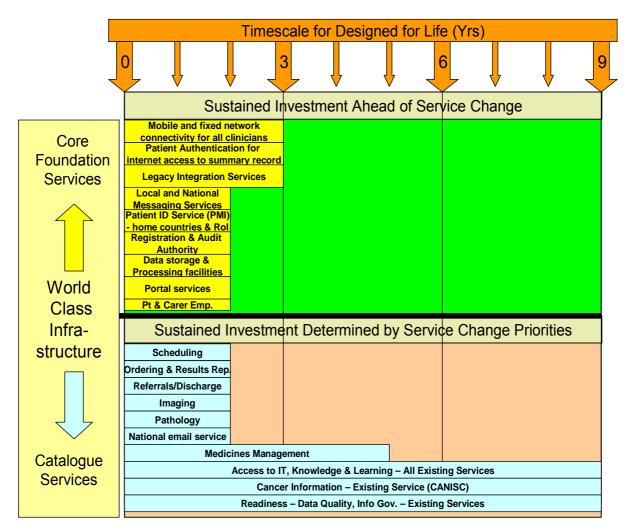


Table 3 below provides a brief description and time scales for each of the main deliverables within the sub-programme above.

Deliverable	Description	Time Scales	
Core Foundation Services			
Mobile and Fixed Network Connectivity for all Clinicians	Provide fixed and mobile connectivity to a broadband national network, so that all clinicians have the ability to access relevant information and knowledge at the point of care	Short term- 0 to 3 years	
Patient Authentication	Provide internet gateway services and patient authentication, so that all patients within Wales have access to their summary health record	Short term- 0 to 3 years	
Legacy Integration Services	Integration services will provide information and process integration for systems that cannot directly participate in the Service Orientated Architecture	Short term- 0 to 3 years	

 Table 3 - World Class Infrastructure- Deliverables and Time Scales

Deliverable	Description	Time Scales
Local & National Messaging Services	Provide local and national messaging services, which enables agreed information to be shared between clinical systems to facilitate a shared view of patient records	Short term- 0 to 2 years
Patient ID Service (PMI)	A technical service for storing and retrieving patient demographic information which will enable clinicians to correctly identify patients from Wales and England at the point of care.	Short term- 0 to 2 years
Registration and Audit Authority	Provide identification, authorisation and auditing services for all appropriate NHS Users to ensure only approved individuals have access to patient information	Short term- 0 to 2 years
Data storage and Processing Facilities	Provide secure and resilient hosting facilities for a potentially wide range of systems with varying technical needs. The facilities will have highly available, high speed links to the NHS Wales network	Short term- 0 to 2 years
Portal Services	A consistent user interface to allow a clinician to access the services available them. The portal will enable access to information around 3 clinical tasks; - Non care related such as guidelines & protocols - Group patient related tasks including lists & schedules - Individual patient centred tasks i.e. patient record	Short term- 0 to 2 years
Patient and Carer Empowerment	Mechanisms for the continued involvement of patients and carers in the design of information services to suit their requirements.	Short term- 0 to 2 years
Catalogue Services		
Scheduling	The orchestration of people, equipment, facilities, consumables and other resources to deliver a business process	Short term- 0 to 2 years
Ordering & Results Reporting	To facilitate the improvement of electronic test requesting and results reporting, particularly for Radiology and Pathology	Short term- 0 to 2 years
Referrals/Discharge	Provide facilities via integration and messaging to support patient referral, discharge and transfer of care	Short term- 0 to 2 years
Imaging	Single integrated radiology and imaging system throughout Wales	Short term- 0 to 2 years
Pathology	Single integrated pathology systems throughout Wales supporting the outcome of the pathology Modernisation Programme	Short term- 0 to 2 years
National e-mail service	Integrated national email service available for use by all NHS Wales staff	Short term- 0 to 2 years
Medicines Management	Encompasses the entire way that medicines are selected, procured, delivered, prescribed, administered and reviewed to optimise the contribution that medicines make to producing informed and desired outcomes of patient care	Short to Medium term 0 to 5 years
Access to IT (Existing Service)	Provision of various items of hardware i.e. PCs and national deals for the provision for operating systems and software licences	On-going National Service
Access to Knowledge (Existing Service)	Provides an increased number and range of e- resources, especially the provision of electronic journals, textbooks and guidelines that will in the longer terms form part of a new e-library for Wales	On-going National Service
Access to Learning (Existing Service)	Provide education, training and development in health informatics for all staff employed by or contracted to NHS Wales	On-going National Service
Readiness – Data Quality & Information Governance (Existing Services)	Data cleansing and quality, 100 staff deployed locally to reduce the number of duplicate paper records	On-going National Service
Cancer Information (Existing	Establish site specific cancer datasets and develop,	On-going

Deliverable	Description	Time Scales
Service – CaNISC)	deploy and support a summary electronic cancer record which provides the clinical multi disciplinary team with access to relevant clinical data for newly diagnosed cancer patients	

Note on IHC and the CANISC System:

Informing Healthcare has the overall management responsibility for the project to set up the CANISC information system which has been developed by the IT Department of Velindre Trust. The original objective was to develop improved communication links for the treatment of cancer patients by providing an electronic cancer record (CaNISC) to support patient care across organisational boundaries in Wales.

In Spring 2006, the CaNISC project completed the development of an additional module to support multi-disciplinary teams (MDT), allowing the collection, storing and reporting of Cancer Waiting Times data. The information held by CaNISC also helps Cancer Networks in their role of performance monitoring the compliance of their trusts in meeting the SaFF targets

CaNISC has been designed to facilitate networked care for patients diagnosed with cancer, through the collection of the All Wales Cancer Data Sets. It is intended to be mandated as a national system for data collection in all Trusts but currently does not meet all of the requirements for an 'industrial strength' national information system in terms of design, quality assurance and technical support. IHC is taking steps to ensure that these requirements can be met by April 2007.

In accordance with the Informing Healthcare national implementation strategy, CANISC will be used as a stepping stone to ensure that the Individual Health Record:

- a) covers the requirements of cancer patients
- b) avoids creating multiple condition specific patient records for people with a range of healthcare problems.

The IHC aim is to develop a single patient record for everyone.