NHS SCOTLAND

eHealth Strategy 2011–2017

(Revised July 2012 to include a Sixth Strategic Aim)

The Scottish Government

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(Revised July 2012 to include a Sixth Strategic Aim)

The Scottish Government, Edinburgh, 2012

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Ministerial Foreword

NHSScotland aims to deliver the highest quality of healthcare services and, through this, to ensure that NHSScotland is recognised by the people of Scotland as amongst the best in the world. The potential of information technology to support and transform healthcare services is universally recognised. Here in Scotland, eHealth has a pivotal role in enabling a radical e-transformation in the way in which high quality integrated healthcare services are delivered efficiently and effectively to people of all ages across our country.

Our vision for 2017, and this second eHealth Strategy for NHSScotland, is ambitious; it has the citizen at the centre and seeks to build on the significant progress we have made over the course of the last three years. Rather than focusing on products and technology, we will instead look to the benefits and outcomes experienced by the people of Scotland flowing from eHealth enabled service re-design and quality improvements.

Six new strategic eHealth aims have been developed and these will be the focus of our activity over the next six years. They are: supporting people to communicate with NHSS; contributing to care integration; improving medicines safety; enhancing the availability of information for staff; and providing clinical and other local managers with the management information they need to inform their decisions and maximising efficient working practices.

By the end of 2014 I expect NHSScotland to made significant process across all six areas and to have delivered the eleven short term goals which are major steps on the path towards our bold vision for eHealth enabled healthcare services.

This latest eHealth Strategy provides NHSScotland's Boards with the opportunity to drive eHealth enabled improvements from closer to the front line of service delivery and to align eHealth more closely with the improvement planning processes already in place.

I am delighted to endorse the achievements celebrated in this strategy, and look forward to the short term goals and actions identified being achieved and taking us further towards our aim of delivering the highest quality of healthcare services for the people of Scotland.

NICOLA STURGEON
Deputy First Minister and Cabinet Secretary for Health, Wellbeing and Cities Strategy

1. Introduction

This eHealth Strategy builds on the direction and achievements of its predecessor which ran from 2008 to 2011.

The Strategy reaffirms the Government's view that information and communication technologies are important to the improvements in quality and the ambitions set out in The HealthCare Quality Strategy for NHSScotland[1] (NHSS) to actively support and enable quality improvements in healthcare services across Scotland.

The Strategy reinforces our move from a focus on technology products, services and their suppliers toward a focus on benefits and outcomes experienced by NHSS professionals in helping them to re-design and improve services, and the citizens of Scotland who benefit from those improvements. It endorses the incremental approach to information and communication technology enabled changes, and that such changes will be planned and driven from closer to the front line of service delivery and aligned more closely with the improvement planning processes in Boards and workforce development. In particular, it recognises the importance of clinical leadership and clinical engagement in developing and delivering successful eHealth initiatives.

The strategy sets out six new strategic eHealth aims which will be developed with a focus on outcomes and real benefits delivered rather than technologies measured by the development or implementation of information and communication technology products or related services. Unlike the previous strategy it is intended to run for 6 years, **with eleven Scottish Spending Review 2011 (SSR11) deliverables to be achieved across NHSS by 2014**. The strategy will be reviewed and re-freshed in 2014, to concur with the next Spending Review, and deliverables for 2017 will be developed.

The strategy has been agreed with NHSS. It is not a top down mandated set of tasks but an agreed direction and set of goals. Where it mandates it does so because NHSS has agreed with the Scottish Government that joint action is the most appropriate way forward. It uses the word 'we' because of the shared nature in which the strategy has been developed, because the expectation is that NHS Boards will work in partnership with each other and with the Scottish Government to deliver it, and because we have developed the partnership governance structures which underpin collective endeavour.

The eHealth Strategy has been set in the context of The Healthcare Quality Strategy and aims to build upon existing foundations and ensure that going forward all work is integrated and aligned to deliver the highest quality healthcare services to people in Scotland, and in doing so provide recognised world leading quality healthcare services. It sets out three Quality Ambitions which provide a consistent description of quality for NHSS, and work is underway to streamline and align all work programmes

[1] Quality Strategy – http://www.scotland.gov.uk/Publications/2010/05/10102307/8

with these Ambitions. These Quality Ambitions act as the focus for priority action for all health services:

- Mutually beneficial partnerships between patients, their families and those delivering healthcare services which respect individual needs and values and which demonstrate compassion, continuity, clear communication and shared decision-making.

- There will be no avoidable injury or harm to people from healthcare they receive, and an appropriate clean and safe environment will be provided for the delivery of healthcare services at all times.

- The most appropriate treatments, interventions, support and services will be provided at the right time to everyone who will benefit and wasteful or harmful variation will be eradicated.

2. How eHealth Is Making A Difference To Healthcare In Scotland

National programmes and projects have been delivered by the Scottish Government's eHealth Directorate in partnership with NHS Boards and Boards working together to acquire, implement and get the benefit from eHealth solutions. Our 2008 priorities were closely aligned to the key health service business challenges of 18 weeks Referral to Treatment, Mental Health, Long Term Conditions, integration across patient journeys and improving capability and capacity. Convergence around common technologies was a major eHealth strategic ambition, with the benefits of lower costs and simplified maintenance.

2.1 Working in collaboration

Boards are well advanced with collaboratively delivering the key aims of the 2008-11 strategy, such as the Patient Management System (PMS), new national GP IT solutions and clinical portal technologies (or electronic windows to information).

Stephen Kettlewell, Consultant Vascular Surgeon/Deputy Clinical Director, NHS Lanarkshire, said:
"Just started using TrakCare this morning at my clinic. Admittedly it took us about half an hour to work it out, but now we are flying. It's absolutely brilliant. It's really easy to use, takes only a few seconds to complete and, best of all, you can see on a single screen exactly who you've still to see, whether they've arrived, whether you've done the outcome etc etc. And hats off to the IT guys who were around to hold our hands. At first I was blind, but now I can see..."

Paul Leonard, consultant in Emergency at St Johns Hospital and the Royal Hospital for Sick Children in Edinburgh, said:
"All the Emergency Departments in NHS Lothian rely on TrakCare to support the delivery of high quality clinical care in a timely fashion. The electronic patient record allows clinicians to quickly review the clinical information and results relating to previous episodes as well as those from the current attendance, and the interaction with PACS makes viewing radiological investigations straightforward. It is difficult to imagine how we would manage without it".

Boards are also making progress with other shared clinical solutions, such as those supporting chemotherapy prescribing and the National Sexual Health System, and the national Picture Archiving and Communication System (PACS).

A consortium of five Boards, supported by the Scottish Government, undertook a joint procurement and selected the TrakCare PMS. The benefits of this collaborative approach are considerable; driving the convergence and standardisation of IT systems at substantially lower cost than could be achieved if Boards were working locally and individually, while maintaining the local ownership that is vital to the successful implementation of these complex changes. Ensuring Boards are able to use the same system improves clinical and administrative management of patient information and frees up staff to spend more time in front-line services. This is releasing time for frontline care and reducing the burden of bureaucracy across NHSS. Collaborative working amongst these Boards is also leading to standardisation and has helped create a version of TrakCare that is known as the Scottish Foundation System. Six Boards now have the opportunity to share support, expertise and experience (TrakCare was already in use in one Board before the procurement), and when fully implemented this system will cover some 75% of NHSS by population.

Dr Jamie Traynor, consultant in renal medicine at Monklands Hospital, NHS Lanarkshire, said:
"This PMS is, to me, the first major leap towards a hospital wide electronic patient record with huge advantages in the delivery of patient care."

NHS Boards are also working in three regional consortia, each developing different aspects of the Clinical Portal programme. The South and East region Boards have been working to deliver a prototype portal solution and in February 2011 awarded a contract to deploy a portal across the four Boards during 2011/12. Meanwhile actual use of NHS Greater Glasgow & Clyde's clinical portal continues to increase rapidly, demonstrating the value placed by clinicians on improved availability of patient information in support of direct patient care.

2.2 Sharing technology and services

A Chemotherapy Electronic Prescribing and Administration System (CEPAS) began operation at the Beatson West of Scotland cancer hub in December 2010, beginning a roll-out programme that will see implementation across four west of Scotland Boards in 2011. Benefits include: improved patient safety; more people centred delivery of services locally; improved communication; and effective use of resources. Other regional cancer networks are also implementing regionally networked CEPAS systems. Another shared solution is Renal PatientView (RPV), which gives patients with renal disease access to elements of their records.

Malcolm Gordon, NHS Greater Glasgow & Clyde, said:
"The Clinical portal has almost eliminated the need to request paper case notes when seeing emergency patients. It has provided information from all Glasgow hospitals when in the past we were restricted to the case notes for one site plus the patient's memory. Having a view across the HB is enormously helpful…"

2.3 National systems and solutions

The national CHI Programme was established to support universal use of the CHI number as NHSS's unique patient identifier. During the lifetime of the Programme from 2005-10, Boards achieved significant improvements, resulting in a CHI compliance target of 97% on clinical communications being exceeded. The Programme focused on simple, sustainable changes to both culture and working practices that delivered significant and measurable improvements in the use of CHI across Scotland. Use of the CHI number as part of safe patient identification will continue to be key to current and future initiatives such as increased regional working, migration to new PMSs and increased use of portal technologies.

The national eReferral programme makes the referral process quicker, safer and better for both patients and staff. By the end of 2010 national monthly performance for referrals received through SCI Gateway had increased to 96%, with 66% of cases being managed electronically, and 6 Boards had an average referral time of less than 6 days.

Alistair Bryden, General Dental Practitioner in NHS Forth Valley, said: "There is now a facility to monitor the entire referral process from the (dental) practice to the patient being seen by the receiving consultant practitioner."

The PACs programme has supported the seamless acquisition, storage, retrieval and display of digital patient images within and between clinical sites across Scotland. It offers the opportunity for radiology reporting to be done remotely, utilising telehealth and potentially facilitating much more flexible working.

The national Emergency Care Summary (ECS) is making a big difference in the unscheduled care setting.

A&E clinician, said: "One of the best tools for improving patient safety. Before the ECS we often had to work blind with no information at all."

Its use is continuing to increase in all Boards across Scotland. In 2009 there were over 2.1 million accesses and in 2010 around 2.5 million accesses. By the end of 2010 there had been over 6.6 million assess since its launch.

The commitment in the 2008-11 Strategy to replace the most common GP IT system in Scotland (GPASS) has been taken forward. The Scottish Government commissioned a consortium of Boards, led by NHS Greater Glasgow & Clyde, to develop a business case and run the procurement process. The work was completed in 2010 with a framework contract allowing a choice of two modern commercial products. The products selected were the second and third most common in use in Scotland and the strategy will deliver improved IT facilities to General Practice, choice consistent with the GP contract and with convergence on fewer more modern IT systems.

A & E Department, Crosshouse Hospital, NHS Ayrshire & Arran: Boy B age 17, taken to A & E with O/D. Unconscious, ECS accessed, no medication listed. Fathers' ECS accessed with permission, lifesaving therapy started immediately.

In 2008 the ePharmacy Programme

introduced the Electronic Transfer of Prescriptions (ETP) between GP practices, community pharmacies and Practitioner Services Division (PSD). This has improved patient safety by reducing transcribing errors, modernised service delivery and increased the efficiency of the processing of prescriptions by removing the reliance on paper. This is the first live national system to fully support ETP in the UK. The programme has also supported the development of a web-based pharmaceutical care planning tool, the Pharmacy Care Record (PCR), to assist pharmacists in providing pharmaceutical care for patients with long term conditions in order to ensure they get the best outcomes from their medicines.

The strategic building blocks of a national technical architecture have also been assembled. This has included standards, principles and access to enabling technologies.

Significant progress has been made on telehealth and telecare developments, with increasing convergence between these previously separate areas of activity over the past 18 months. A review of the Scottish Centre for Telehealth (SCT) in 2009 resulted in the SCT being brought within the organisation and governance framework of NHS 24 and an interim telehealth strategy (2010-12) being published in April 2010[2]. This strategy re-focused telehealth activity on four clinical programmes of work which would be delivered across Scotland. From 1 April 2011, the activities of the national telecare programme have been merged with the SCT within NHS 24 offering considerable opportunities for improved health and social care integration. Continued links with the Joint Improvement Team will also be maintained to support local partnership programmes. A strategy which will bring the work of the SCT, the telecare programme and NHS 24 together will be developed.

The Scottish Government has been working with NHS Boards to promote safe, effective and appropriate use of information by providing strategic direction through the publication of an Information Assurance Strategy and core guidance including:

- Records Management: Code of Practice[3]
- Mobile Data Protection Standard, which requires all mobile devices to be encrypted[4]
- NHSS Code of Practice on Protecting Patient Confidentiality[5] and
- Information Governance Educational Competency Framework[6]

Through collaboration with the Academy of Medical Royal Colleges, the Scottish Government has developed a joint eHealth Competency Framework for practising clinicians who have a role in eHealth at local, regional or national level. It is anticipated that this Framework will inform the eHealth component for undergraduate

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[2] www.sct.scot.nhs.uk/strategy.html
[3] http://www.scotland.gov.uk/Publications/2010/04/20142935/1
[4] http://www.ehealth.scot.nhs.uk/wp-content/documents/mobile-data-protection-standard-pdf3.pdf
[5] www.ehealth.scot.nhs.uk/wp-content/documents/nhs-code-of-practice-on-protecting-patient-confidentiality.pdf
[6] http://www.nes.scot.nhs.uk/media/584116/information_governance_in_nhsscotland competency_framework.pdf

and postgraduate training in Scotland and continuous professional development across NHSS[7].

A summary of our performance against the actions and aims contained in the eHealth Strategy 2008-11 can be found in Annexe 1 of this document.

3. Our New Policy Context

3.1 Quality Strategy

The strategic agenda for healthcare services in Scotland is set by The Healthcare Quality Strategy for NHSScotland. This is the overarching strategic context for the direction, development and delivery of all healthcare services for the years to come both in terms of securing improvement in the quality of healthcare services, and in achieving the necessary efficiencies. The eHealth Strategy also references the 6 healthcare Quality Outcomes which provide a more comprehensive description of the priority areas for improvement in support of the Quality Ambitions. These provide a context for partnership discussions about local and national priority areas for action.

The 6 healthcare Quality Outcomes are:

- **Everyone gets the best start in life, and is able to live a longer, healthier life**
  NHSS works effectively in partnership with the public and other organisations to encourage healthier lifestyles and to enable self care, therefore preventing illness and improving quality of life

- **People are able to live well at home or in the community**
  NHSS plans proactively with patients and with other partners, working across primary, community and secondary care, so that the need for hospital admission is minimised. This is therefore reflected in the outcome indicators on emergency admissions and end of life care

- **Healthcare is safe for every person, every time**
  Healthcare services are safe for all users, across the whole system

- **Everyone has a positive experience of healthcare**
  Patients and their carers have a positive experience of the health and care system every time, which leads them to have the best possible outcomes. This should be demonstrable across all equalities groups

- **Staff feel supported and engaged**
  Staff throughout NHSS, and by extension, their public and third sector partners, feel supported and engaged, enabling them to provide high quality care to all patients, and to improve and innovate

[7] http://aomrc.org.uk/publications/reports-a-guidance/doc_details/9403-ehealth competency-framework-defining-the-role-of-the-expert-clinician-.html

- **The best use is made of available resources**
  NHSS works efficiently and effectively, making the best possible use of available resources.

The Healthcare Quality Strategy provides the overall strategic context and direction for healthcare in Scotland; however there are many other health and social care strategies and policies which have an eHealth component, some of which are mentioned in this strategy.

3.2 Health and Social Care

Joint working between health, social care and other partners is a crucial aspect of community based health work in Scotland today. However, over the next decade, health and social care organisations and structures will increasingly have to contend with an ageing population, increasing numbers of people with complex long term conditions, budget constraints, increasingly sophisticated (and expensive) treatments and rising expectations of what health and social care services should deliver. This will require NHS Boards and local authorities working even closer together in partnership if services are to be increasingly patient centred, effective and safe. It will also see a greater emphasis being placed on care networks and pathways (e.g. for a specific disease) or through health and social care services that proactively seek to co-ordinate care for people across a range of different health and social care providers.

Together with colleagues in the local authorities, NHSS will develop an IT strategy that not only focuses on health and social care collaboration and integration, but that clearly articulates the technical developments that will be necessary. This will place greater emphasis on partnership working, the need to develop information sharing systems across health and social work to support the delivery of appropriate community based services, and to ensure information is available across health, social services and the third sector to support care for individuals.

3.3 Public Sector IT strategy

The review of public sector IT undertaken by John McClelland[8] and published on 21 June 2011 sets out a challenging agenda of change for the Scottish Public Sector. Its endorsement of the governance and structural changes that were made in the eHealth Strategy 2008-11 is a welcome recognition of the directional changes about how IT supports public services that were planned in 2007. The report challenges the health sector to go further, both in relation to its engagement with planned “pan public sector” services and contracts and to further embed the national eHealth Governance within NHSS to cover all national information and communication technology projects and services. **The eHealth Strategy Board will engage with the wider national initiatives as they are developed and will report within 6 months on further development of the successful eHealth Governance approaches.**

[8] http://www.scotland.gov.uk/News/Releases/2011/06/21092355

4. Technical, Governance And Financial Context

4.1 A New eHealth Finance Strategy

The eHealth Strategy 2008-11 had a strong focus on capital expenditure and renewal and growth of the capabilities and assets of NHSS. The building blocks for future IT enabled progress are now in place and eHealth has moved from an acquisition/development phase to exploiting the value of the new capabilities acquired during 2008-11. The programme will be a revenue based improvement programme leveraging the IT assets to support the quality improvements that NHSS has committed itself to. From 2011-12, the majority of eHealth funding will be distributed to Boards rather than allocated on a project by project basis or spent centrally by the Scottish Government. There will be allocations for:

- change programmes to deliver six strategic eHealth aims;
- applications/services enablers i.e. products and services already in use e.g. SCI Store and PACs; and
- infrastructure enablers e.g. Broadband and email.

These changes have been introduced to align with the key objectives of supporting change which is closer to the professionals providing care and to the people that rely on it. Experience with the strategy in 2008-11 has also demonstrated that these approaches produce significant value for money over more centralised control based approaches.

In September 2009, Robert Calderwood, CEO of NHS Greater Glasgow & Clyde, was asked to look at efficiencies and identify areas for savings in existing eHealth expenditure. The successful implementation of these findings will provide the funds to take forward the six Strategic eHealth aims. One recommendation was to develop a new eHealth finance strategy, replacing the one which has been in place since 2008. The new eHealth finance strategy, which was implemented on 1 April 2011, supports the delivery of the new eHealth Strategy. It has done this against the background of a radically different financial environment. It also builds on our experience of what has worked well and what has not over 2008-11. Actions to acknowledge the financial challenges faced by NHSS and health care providers include:

- allocating a larger proportion of the eHealth budget to NHS Boards against a smaller number of strategic headings (the six strategic aims), allowing Boards greater flexibility
- releasing funds for new investment from areas of existing expenditure through efficiencies
- further convergence around common eHealth systems, particularly where costs can be reduced
- building on the success of previous collaboration such as PMS to establish shared services
- making available funds to support eHealth enabled savings in NHSS
- not penalising where Boards have already invested; and
- not rewarding Boards with higher than average cost solutions

4.2 Our New delivery model: outcomes based approach

Our focus on six strategic eHealth aims as an enabler of quality improvements in healthcare services across Scotland, rather than discrete projects and programmes, and changes in the way in which eHealth will be funded have considerable implications for the way which eHealth will be delivered. It also changes the way in which performance is measured.

NHS Boards will progress the six strategic eHealth aims over the 6 years of the eHealth Strategy, with year 1 (2011-12) being a shadow year[9]. It is envisaged that from 2012-13, the six strategic aims will, where possible, be incorporated into Local Delivery Plans (LDPs). These are the 'performance contract' between the Scottish Government and Boards. They run for three years, with the opportunity to review and adjust future years' plans. Boards develop LDPs in consultation with their stakeholders and for those that do not already include eHealth in their LDP process, they will have until the end of 2011-12 to revise their LDPs for 2012-13 and 2013-14. Our eHealth Strategy will cover two LDP cycles, providing a planning horizon that will allow time for the development of the value of aligning IT assets with Board improvement planning and for the development of convergence plans which make sense in financial terms. The Strategy will be re-visited and refreshed in 2014 to concur with the outputs of the next Scottish Spending Review, and a set of deliverables for 2017 will be developed in collaboration with NHS Boards.

Aligned to Boards' LDPs will be eHealth Plans, which will also run for three years, with the opportunity to review and adjust future plans each year. Plans should be locally signed off by a senior management board and progress reported annually to the Scottish Government. It is intended that eHealth will also become part of a Board's Annual Review. NHS Boards' eHealth Plans will contain:

- information and evidence on eHealth's contribution towards achieving the six strategic eHealth aims
- information assurance embedded into Boards' risk management procedures and systems
- anticipated budgets (both local and national)
- local priorities and activities
- benefits being maximised from assets that have been acquired during the previous strategy (2008-11)
- promotion and implementation of good practice and successful local initiatives more widely
- convergence of approaches to delivery in order to reduce duplication of effort and reduce cost
- adherence to national standards for architecture and design; and
- collaborative working between Boards and cross-border eHealth developments

[9] A shadow year is necessary as Boards' LDPs for 2011-12 were signed off by NHS Boards and the Scottish Government by 31 March 2011

The Scottish Government will report annually to the Scottish Parliament on progress towards achieving the six strategic eHealth aims. Our eHealth Report will draw on the material contained in Boards' LDPs and eHealth Plans.

We will promote and encourage the sharing of best practice through: our networks of technical and clinical eHealth leads; our people and website; conferences; newsletters; and the on-line publication of Boards' eHealth plans.

While the focus of the eHealth strategy and its funding is moving strongly to outcomes, how technology is organised and delivered remains important. eHealth is committed to encouraging value based convergence around common eHealth systems and approaches to the delivery of healthcare services across Scotland. Particularly where it makes collaboration between health providers easier and achieves greater value for money and efficiency. A national technical Design Authority has been established and a set of Architectural Principles to assist NHS Boards make informed choices has been published[10]. A national standards development framework has also been established to develop and promote standards on a broad range of topics. Further information on these standards can be found at http://www.ehealth.scot.nhs.uk An application strategy and an infrastructure strategy, which will be agreed with boards, will be an important set of reference documents for the Design Authority.

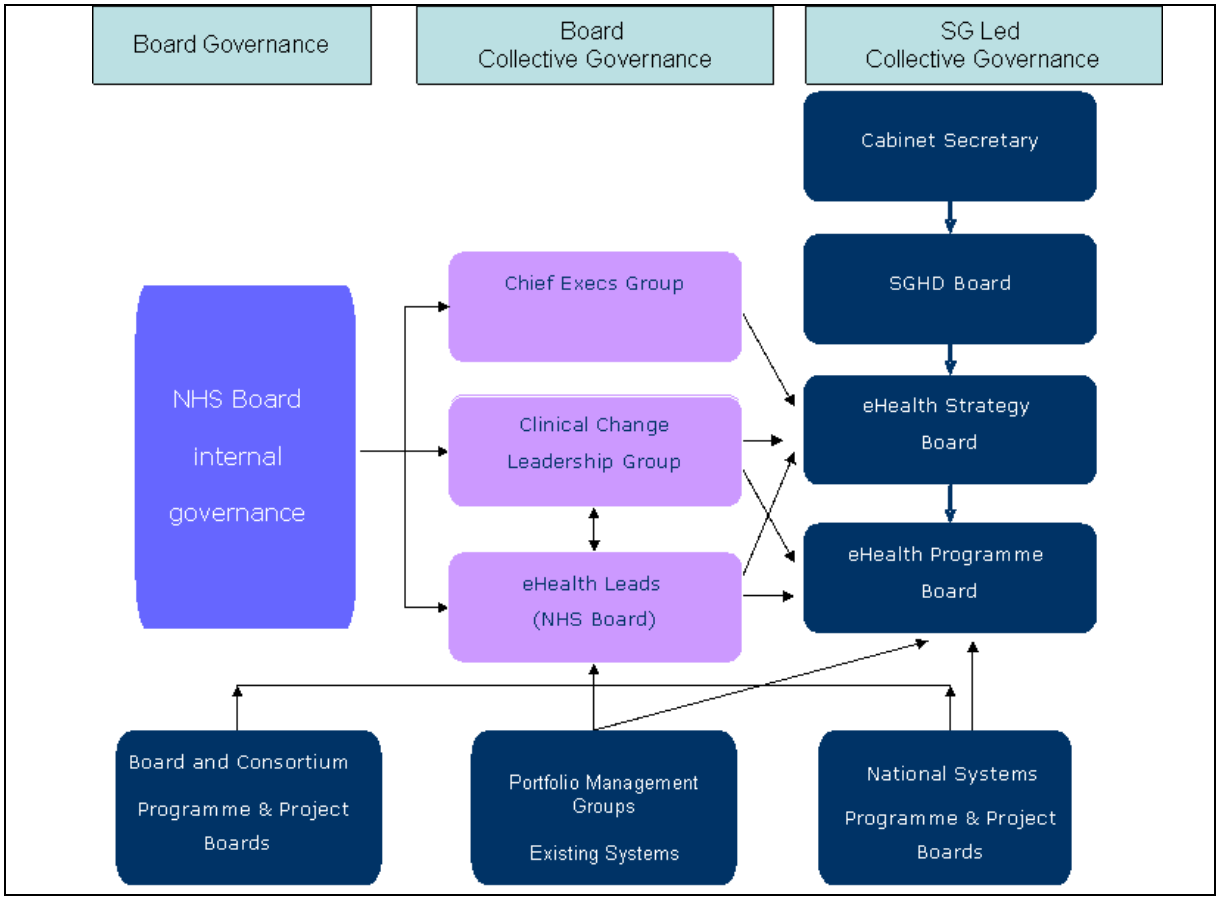
The Efficiency and Productivity: Framework for SR10[11] identifies priority areas to improve quality and efficiency across NHSS. It is a companion to the Quality Strategy and provides a baseline for the changes required that will be undertaken jointly between the Scottish Government, NHS Boards and other public sector organisations. The Framework sets out three overarching themes:

- support;
- enabler, which includes the effective use of technology in the delivery and redesign of healthcare; and
- cost reductions, which includes reducing variation, waste and harm.

4.3 Governance

Over the course of the previous strategy there have been substantial reforms and improvements around governance of eHealth, with new structures maturing and working increasingly well. These structures are depicted in the figure below:

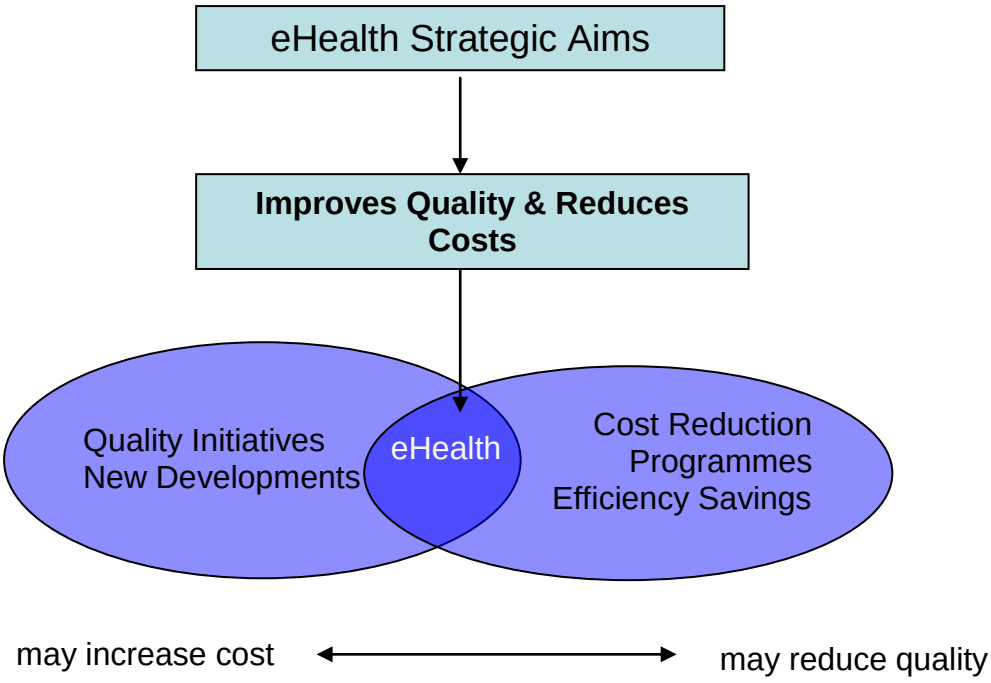
[10] http://www.ehealth.scot.nhs.uk/wp-content/documents/architecture-principles.pdf
[11] NHSScotland Efficiency and Productivity: Framework for SR10 2011-2015



With budgets held by Boards for nationally used systems, a key delivery mechanism is the Boards' eHealth Leads Group continuing to act collectively. To supplement this there are a number of Portfolio Management Groups (PMGs) which determine the roadmap for logical groupings of these systems. PMGs are accountable to both Boards through the eHealth Leads and to the national eHealth Programme Board for strategic directions. The Clinical Change Leadership Group (CCLG) is made up of senior clinical professionals with representation from all Health Boards. Its role is to ensure that eHealth strategy reflects the priorities of the clinical community across NHSS. CCLG will continue to act in advisory capacity to the eHealth Programme Board, the eHealth Leads and eHealth in the Scottish Government.

5. How We Are Responding To The Challenges – Our Strategic Aims For Ehealth

Our drive for quality must be the priority within tight resourcing. Nonetheless we have the opportunity to mainstream eHealth through delivering significant benefits. The Quality Strategy provides the policy context, and our response to budgetary constraints and the NHSS efficiency Framework has been to focus on how eHealth initiatives can deliver both quality services and efficiency savings. In doing this we have developed six new strategic eHealth aims for 2011-17 and positioned these aims and our eHealth Strategy to meet the future challenges. The relationship between these policies is depicted in the figure below.



The six strategic eHealth aims have been developed in consultation with stakeholders. Our new strategic eHealth aims contribute to the realisation of the three Quality Ambitions to varying amounts (see below).

They are to use information and technology in a coordinated way to:

- **maximise efficient working practices**, **minimise wasteful variation, bring about measurable savings and ensure value for money**
- **support people to communicate with the NHSS, manage their own health and wellbeing, and to become more active participants in the care and services they receive**
- **contribute to care integration and to support people with long term conditions**
- **improve the availability of appropriate information for healthcare workers[12] and the tools to use and communicate that information effectively to improve quality**
- **improve the safety of people taking medicines and their effective use**
- **provide clinical and other local managers across the health and social care spectrum with the timely management information they need to inform their decisions on service quality, performance and delivery**

[12] The World Health Organisation defines a healthcare worker as anyone whose focus or activity is to improve health. This definition includes providers (e.g., doctors, nurses and midwives) as well as technicians and managers

Additionally, we will:

- continue to promote, encourage and facilitate collaboration between Boards, and to drive the convergence and standardisation of IT systems
- build evaluation into eHealth developments and share the evidence from these experiences
- ensure that Equality Impact Assessments are undertaken prior to the introduction of new eHealth systems and processes
- capitalise on our existing eHealth investments and
- support innovative applications of eHealth which enable the delivery of the NHSS's three Quality Ambitions

The benefits of this strategic approach are represented in the table below.

		The 3 Quality Ambitions		
		Person Centred	Safe	Effective
Strategic eHealth Aims 2011-17	Maximising efficient working practices	✓	✓	✓✓
	Supporting people to communicate with NHSS and manage their own health and wellbeing	✓✓✓	✓✓	✓✓✓
	Contributing to care integration and supporting people with long term conditions	✓✓✓	✓✓	✓✓✓
	Enhancing the availability of appropriate information for healthcare workers	✓	✓✓✓	✓✓✓
	Improving the safety of people taking medicines and their effective use	✓	✓✓✓	✓✓✓
	Providing clinical and other local managers with the management information they need to inform their decisions	✓	✓✓	✓✓✓

Other important activities and national systems that we will continue to support and promote include: CHI, and capitalising on the new PMS and GP IT systems, the ePharmacy Programme and progress on technology support for reducing healthcare acquired infection control. Effective themes from the previous strategy will be continued and strengthened. They are:

- supporting the transformation of NHSS services
- making patient care safer and more effective by making available the right information at the right place and at the right time
- information is a key asset and its management is an integral part of good corporate governance
- an incremental and pragmatic approach
- implementing the benefit from existing assets that have been acquired
- supporting innovation and
- understanding the needs of different communities

Further detail on each strategic aim can now be provided:

1 To Maximise Efficient Working Practices, Minimise Wasteful Variation, Bring About Measurable Savings And Ensure Value For Money.

Making use of information and technology effectively can bring about quality improvements in healthcare services and efficiency savings in healthcare across NHSS. It also crucially frees up staff time for patient care and reduces waiting times.

A 'paper-light' NHSS offers fast, local and reliable access to services through appropriate technologies. Achieving this across NHSS, and particularly at the interface between primary and secondary care, will require focused activity and systematic change in the way services are delivered and how people work. Examples show that services can be delivered more efficiently, effectively and become more person-centred.

Making it real – reducing document distribution times at the Golden Jubilee

As one of 2 distinct parts that make up the NHSS National Waiting Times Centre, the Golden Jubilee is able to take referrals from any NHS Board to provide additional support for a wide range of procedures, helping make sure that waiting times targets are met. By introducing digital dictation, speech recognition and clinicians reviewing documents electronically, document turnaround times have been reduced and the need for numerous different paper copies removed. All letters are now being sent out in under 12 hours, ensuring that patients and GPs receive correspondence as efficiently and quickly as possible, thereby reducing waiting times.

There is tremendous potential to re-shape the way in which NHS Boards deliver services and run their business. Exploiting technology can help bring about significant reductions in waiting times and administration costs. A number of Boards are piloting technologies (digital dictation, voice recognition, scanning and video conferencing) aimed at reducing waiting times, business overheads and travel. The challenge for Boards is to move from these discrete projects into mainstream service delivery and ultimately eliminate paper based exchanges between care providers.

Our vision for 2017 includes a 'paper light' NHSS, where digital dictation, voice recognition, scanning and video conferencing are common place.

By 2014 NHS Boards will have well established programmes to replace paper with digital equivalents, along with digital dictation, voice recognition, scanning and video conferencing.

Making it real – Digital Dictation in NHS Dumfries and Galloway

In 2009 digital dictation was introduced across all specialities at the Royal Infirmary in Dumfries. A combination of digital dictation, the auto-population of letter templates from the patient administration system and online checking and verification of letters by clinicians has reduced the overall time between patients attending clinics and their letters being posted. In June 2009 there were 1,300 letters taking longer than 14 days to be posted after dictation, in November 2009 that had reduced to 31. This reduction was achieved without an increase in medical secretary resource.

Making it real – Delivering more for less in NHS Lothian

A speech recognition project was undertaken across 4 sites. Benefits included: significant efficiency gains in time savings (e.g. discharge summary production fell from 9 to 5 days in gastroenterology); reduction in telephone calls and case notes having to be pulled; improved prioritisation of urgent letters (e.g. 23 minutes from dictation to sign-off); and bar coding reduced the risk of patient identification errors. Quicker throughput of letters directly benefited patient care and led to less staff being required to type clinical correspondence and letters. As a result of the evidence obtained, an efficiency gain of 33% has been incorporated into the business case.

In NHS Lothian that transition is well underway. Video conferencing technology was initially procured for staff use and was rolled out across its locations onto staff desktop PCs. Following its successful implementation, and in response to staff feedback, work is now underway to expend its use into clinical settings e.g. pulmonary clinics, breast feeding support and smoking cessation clinics.

2 To Support People To Communicate With The NHSS, Manage Their Own Health And Wellbeing, And To Become More Active Participants In The Care And Services They Receive.

Technological change is leading to new ways of delivering and improving public services. It allows greater opportunity for people to contribute their views, access information and interact with others. Improved broadband coverage across Scotland is allowing greater and faster internet access from home and smartphones. For young people in particular, the internet and mobile phones are fast becoming the primary means by which they can be communicated with and through which they expect to access services.

Society is increasingly comfortable with self-service models of interaction and although face-to-face services have not disappeared, their dominance has been replaced by a much more diverse mix. Although NHS24 delivers telephone based and online services, NHSS relies heavily on face-to-face consultations and the way people receive healthcare remains largely unchanged despite the radical transformation in the way in which other public services are delivered.

eHealth can enable NHSS to take advantage of the everyday technologies already used by most people in their daily lives. It can also enable people to become more active participants in the healthcare and services they receive. What's more, effective engagement with people is fundamental to quality improvement. High quality care is not just about meeting the needs of people who present themselves but is also about reaching out to those who need care but may not seek it. eHealth has considerable potential to make healthcare more person-centred and responsive. For NHSScotland, this means that failing to develop ways to reach out electronically has serious implications for the long-term health of a large section of society.

eHealth could contribute to a radical transformation in the delivery of health and social care services in Scotland through enabling people to access and interact with their health records electronically, and through a greater emphasis on the delivery of services through different communication channels, e.g. online by patient portals or electronic windows to information, via email, websites, digital channels and social media.

Over the course of this strategy we will hold a public debate on how eHealth should enable people in Scotland greater participation in the healthcare and services they receive from NHSS.

The delivery of services online can provide services that are easier, quicker and more convenient for people to use. It can also do so at a lower price than other more conventional methods allow[13]. For both these reasons, the public sector, including the Scottish Government, is committed to delivering an increasing proportion of its services online.

IT offers the Scottish Government and other public sector organisations the opportunity to work together to deliver improved health and social care services. For example, the Customer First Programme is developing a national infrastructure to support local

Making it real - the Scottish Care Information – Diabetes Collaboration
Using the NHSS My Diabetes My Way patient information website, the pilot, involving over 100 patients, will allow users access to relevant parts of their electronic diabetes record, such as biochemistry tests, blood pressure, body mass index, foot risk scores, eye screening results and prescribing. Alongside the clinical data, "patient friendly" information helps to explain what their record means. This will give patients better understanding of diabetes and greater involvement, empowerment and control of their care. Secure user account provisioning and authentication is carried out in partnership with the Improvement Service "Citizen's Account" programme. Primarily established to enable citizens to gain secure access to service provided by councils and their partners, this is its first application in healthcare.

[13] Although the savings delivered through online transactions vary according to the nature of the transaction, one report has estimated the average cost to be £0.08, a opposed to £10.53 for a face-to-face transaction, £3.39 for telephone transaction and £12.10 for a postal transaction. See McNish J, *Customer Contact Profiling Report-ESD Toolkit*, Aston Campbell Associates 2008, www.esd.org.uk/Esdtoolkit/Documents.ashx?doc=61149&agency=527, cited in The Champion for Digital Inclusion, *The Economic Case for Digital Inclusion,* October 2009, http://www.parliamentandinternet.org.uk/uploads/Final_report.pdf p49

authorities in delivering services; a national entitlement card, and a citizen account system, to allow councils to keep accurate up-to-date records on their customers. The Scottish Care Information – Diabetes Collaboration is the first example of healthcare providers working with the Customer First Programme to deliver tailored health information for people with diabetes.

Our vision for 2017 includes the Scottish Government working with the Customer First Programme on areas where its infrastructure can be shared with NHSS.

The Scottish Government has provided funding to the Improvement Service and CoSLA to develop online services, and to streamline business processes. Through the DirectScot portal project, the Scottish Government aims to improve access to information and Government services. **We will provide a link from this site to NHS24's Health Information Service.** The health information service is provided through NHS Inform www.nhsinform.co.uk, a single source of quality assured health information and NHS 24 self care advice provision through www.nhs24.com

GP Dr Jim Campbell, Townhead Surgery, said
"The development of the online patient portal has given us a wonderful opportunity to work closely with groups of patients to identify how they can take control of their health".

A patient portal user, said:
"Think it is good for prescriptions and for keeping up to date with moods, and life goals when I get time to get in more. Also the links are good." "I like the look of the portal, it's easy on the eye, easy to understand." "Very user friendly"

A Renal PatientView User, said:
"Patients don't always take in what medics say and to be able to take time to read it properly in the comfort of your own home is wonderful! Keep up the good work."

NHS24 is an integral part of NHSS and its activity is focused on delivering and progressing three areas of work: improving health; unscheduled care; and improving access to NHSS services. It already delivers telephone and online services to people across Scotland 24 hours a day, 365 days a year through its national telephony, call centres and established websites. It provides services in partnership with NHS Boards and provides people with a range of self care advice, receiving around 1.5 million calls per year to its unscheduled care service and over 750,000 hits[14] on its website www.nhs24.com.

Our vision for 2017 is based around a common set of IT services and people being able to communicate with NHSS using the communication channel of their choice.

[14] NHS24 Delivering and Moving Forward (2010) www.nhs24.com

Making it real – NHS Ayrshire & Arran Patient Portal

A secure website allowing patients to access and update their own health records online is running at the Townhead Surgery in Irvine and Kilwinning Medical Practice. Patients can: request appointments online; request repeat prescriptions; access test results; record, track and monitor their blood pressure; set targets for weight and other goals, and record and track blood sugar level. The portal allows patients to become partners in their own care and has the potential to deliver healthcare services more efficiently and safely. The portal builds on the success of an electronic access project run by the Townhead Surgery since 2002, which has seen more than 26,000 repeat prescriptions ordered by patients. An app for smart phone users is being developed. There is evidence that the patient portal is being used as an alternative to visits and telephone calls. 32% of users visited Kilwinning less often and 23% of users visited Townhead less often. 76% of Kilwinning users telephone less and 60% of Townhead users telephone less.

The purpose, architecture, design and content of that platform will be informed by our public debate. In the interim, **we will develop a national strategy covering the range of electronic contact that individuals have with NHSS. This will provide a coherent and citizen centred framework for these developments.**

eHealth initiatives can inform and support people in their own homes to better manage and maintain their health, and to better control ill health, particularly pulmonary disease, diabetes and kidney disease. Delivering these services electronically supports people's expectations about engaging with public services as seamlessly as they do other services, e.g. online banking and shopping.

There are other ways in which even very simple technologies can bring about people's empowerment through information. Studies into the effect of email have found that amongst the benefits most valued by patients is that they can save and reread the medical advice given to them[15]. This is something that face-to-face interactions rarely allow. A source of concern about healthcare that is delivered remotely is that it could exacerbate isolation and exclusion. However, increasing demand for eHealth, even to the point where it becomes the preferred option for some, will not prevent people from choosing face-to-face services. Allowing people to choose eHealth services may actually allow face-to-face services to be better targeted at those who will benefit the most from them.

By 2014 the eHealth Programme will have developed a national strategy covering the range of electronic contact that individuals have with NHSS. This will provide a coherent and citizen centred framework for these developments.

By 2014 a national strategy to guide further work in this area will have been developed and agreed.

[15] Wallwiener et al (2009) "Impact of electronic messaging on the patient-physician interaction", Journal of Telemedicine and Telecare, vol 15: 243-2

3 To contribute to care integration and to support people with long term conditions.

By integrating networks of care we aim to improve health and wellbeing by increasing our emphasis on health improvement and anticipatory care, providing more continuous care and more support closer to home. Since 2006, the Scottish Government has prioritised care integration to ensure that whenever possible health and social care services are provided in people's own homes and local communities, rather than in care homes and hospitals, and that the transition between care providers is made as seamless as possible. This requires a partnership approach between NHSS, Local Authorities and third sector care providers. It also requires multidisciplinary working and appropriate information sharing at all levels. The availability and use of modern IT and information sharing tools is essential. Together with colleagues in local authorities, **we will develop an IT strategy that is specifically focused on health and social care collaboration and integration.**

Making it real – NHS Tayside's long term conditions eHealth clinical system
This encourages communication and sharing of data between primary and secondary care. The system currently works for diabetes, cardiology and COPD and will be extended to more conditions in the future

Around 90,000 older people receive some kind of care, whether in their home, a care home or long term hospital care. We expect there to be 25% more (i.e. an extra 23,000) older people who will need some form of care in just the next 6 years. We have a delivery landscape that was simply not designed to cope with the demands that it will soon face. In 2010 Reshaping Care for Older People was launched and it looked at the best approach to address the needs of our aging population[16]. A £70 million Change Fund for NHS Boards and partner local authorities was created for 2011-12. This is supporting the delivery of new models of care. These new delivery models rely on the right information being available to the right people at the right time. **eHealth is an essential part of their delivery infrastructure and we will work with the Quality Improvement Hub ('the Hub') and other partners in their development.** Telecare and telehealth are key eHealth 'tools' that Local Partnerships may deploy in support of local transformational plans and we look forward to these being an important part of local Change Fund activities and Community Planning priorities.

People with long term conditions are the major users of health and social care support services. Over 2 million people in Scotland live with one or more long term condition and their occurrence is set to rise significantly with an aging population. Long-term conditions currently account for around 80% of GP consultations, this is unsustainable. eHealth can support people with better information and minimise unnecessary face-to-face contact with health services, essential if we are to meet the future challenges of an aging population and reductions in health spending. Telecare and telehealth technologies can also provide effective self management support tools for people with long term conditions, which enable them to live independently at home with a much greater understanding of their condition and an improved quality of life.

[16] http://www.scotland.gov.uk/Topics/Health/care/reshaping

The Palliative Care Summary (ePCS) is an extension of the ECS and is intended to be used for people with palliative care needs. It contains detailed information on diagnoses, patient wishes and anticipatory care plans. Like the ECS it is intended for use by clinicians in an emergency and out of hours (OOHs). The electronic Key Information Summary (KIS) is a further extension of the ECS. It will extend the ECS and ePCS across a broader range of clinical situations to support sharing of key information from anticipatory care plans. A KIS will be created in partnership with any person for whom detailed information needs to be made available for healthcare workers providing care when the GP practice is closed. It is intended to replace the "special notes" for weekend care, faxed summaries for OOHs and anticipatory care forms for people with long term conditions. It will also be used for people with mental health issues or unusual conditions, who might have difficulty remembering crucial details if they become ill.

Making its real – eHealth contributing to care integration and integrating health and social care services

Nine long term conditions and eHealth projects were allocated £1.6 million from the eHealth Programme in 2010-11. Projects that will, when fully implemented, contribute to significant improvements in the quality of health and social care services across Scotland. The projects cover a wide spectrum of eHealth activity in health and social care across NHS Boards and Local Authorities. They include:

Forth Valley is integrating the KIS with 9 GP practices and enabling ACPs to be shared

Highland & Grampian are implementing KIS across GP practices. This will enable healthcare workers to access appropriate information in the event that an escalation in care is required and for information to be shared with OOHs and NHS24

Lanarkshire is looking at the entire information pathway for groups of people with long term conditions. It will investigate where and how eHealth could be best used to support better care, and bridge gaps in information pathways between primary and secondary care.

Our vision is to have an ePCS and/or a KIS in place for everyone in Scotland who needs one.

Self care, self management and person centred approaches can reduce the impact of long term conditions on NHSS. They empower people to manage their conditions and put individuals in control of their care. The role of health and social care providers is to promote wellbeing and support people to remain as independent as possible. Self-directed support gives people the choice as to how their support is arranged and the right to take as much control as they wish. Some interventions will be very specific due to the complexity of the person's long term conditions. For example, patients on Orkney who have complex diabetes can have consultations with the consultant based in Aberdeen via video conferencing. During this consultation the patient and the consultant are able to discuss their progress, review their home glucose monitoring results and agree actions to improve their self care at home. Others will be broader, e.g. smoking cessation advice for people with COPD.

In addition to the telephone and online support NHS24 offers people living in Scotland, NHS24 is responsible for the delivery of the Scottish Centre for Telehealth & Telecare's (SCTT) four national telehealth programmes and the telecare action plan for Scotland[17]. The national telehealth programmes include support for people with long term conditions, paediatrics, stroke and mental health problems. People with COPD are routinely offered the opportunity to manage their condition using telehealth tools, and access to pulmonary rehabilitation and smoking cessation. The stroke programme enable people across Scotland with confirmed ischaemic stroke, filling the required criteria, access to potentially lifesaving thrombolysis treatment and provide improved access to specialist rehabilitation services. Whilst the mental health programme includes the provision of equitable access to all mental health services regardless of patient geography. Giving people better information about their conditions has been shown to empower individuals (and their carers) and support self management. Telehealth and telecare can be used to support the whole spectrum of long term conditions and to develop, in partnership with health and social care workers and patients, potential areas for better self management.

Making it real – Telehealth in Argyll and Bute

The Argyll and Bute Partnership set out to: support people with LTCs; develop expertise in local staff to use remote monitoring as part of peoples' care; to link the work on monitoring LTCs to the reduction in crisis admissions to hospital; and to assist patients to manage their health more effectively. Three types of technology were trialled: home telehealth pods (for people with COPD); surgery pods for more general health monitoring; and pods placed within community facilities. Information gathered by the home pods was sent electronically to a secure server and checked daily by community nursing teams, enabling action to be taken where necessary. The surgery pods were configured to transfer data directly to the EPR system and the information from the community pods, which were used mainly by people with hypertension, was transferred onto a secure site for health professionals to review. The overall findings of the evaluation were positive and supported the continuation of the scheme. The reduction in hospital admissions observed for people with COPD was sufficient to support a continuation and expansion of the scheme within the wider Highland area. More details can be found at www.jitscotland.org

Telecare is an important eHealth tool which supports people, particular the elderly or those with long term health conditions, to live at home for as long as they want to. Up to 2011 telecare has been supported with £20 million from the Telecare Development Programme. Around 29,000 people have received a telecare service since 2006 and over 2,000 of these people are known to be diagnosed with

[17] Telecare to 2012: An Action Plan for Scotland (2011) www.jitscotland.org.uk/action-areas/telecare-in-scotland/

dementia[18]. Scotland is currently performing well in the development and implementation of telecare and telehealth services[19]. It is estimated that efficiencies (in the form of care home and hospital bed days saved/avoided admissions) of around £48 million have been made.

The Scottish Government will continue its support for telehealth and telecare through the provision of £1 million per year for the SCTT.

The Scottish Assisted Living Programme (SALP) is the next stage of the development of telecare and telehealth in Scotland. In partnership with the UK's Technology Strategy Board, the Programme includes the DALLAS (Delivery of Assisted Living Lifestyles at Scale) competition. A national programme board has been established to take forward the SALP and it is intended that the learning from phase 1 will be captured and used to inform national roll-out up to and beyond 2015. NHS24/SCTT is leading the programme in Scotland on behalf of the Scottish Government, which aims to improve the management of long term conditions (initially COPD) to inform pathway development and service models. Scotland will be one of three to five communities, each with up to 10,000 people with long term conditions across the UK[20].

A telecare user said:
"It (telecare) makes a difference. It means that you're not on your own."

Another telecare user said
"We were at the point where we needed more home care. I was totally stressed out. But once we got telecare it made a massive difference, it relived a lot of pressure."

A carer said:
"One of our family would usually have to be on 'granny watch' at all times in the evenings and weekends, but now we can go about our normal lives, knowing that we will get called if there is a problem."

Not withstanding the above, one of the key challenges remains to secure mainstreamed and integrated telecare/telehealth service provision, and thereby support the independence and wellbeing of as large a number of potential users as possible.

Our vision for 2017 anticipates this being achieved through a mixed economy of care (public sector, private sector and Self Directed Support).

Our vision for 2017 includes the further expansion of telehealth and telecare in the treatment and care of people with long term conditions and care for older people. We will collaborate with NHS24/SCTT to further expand technology enabled service redesign which is cost and clinically effective.

[18] Telecare to 2012: An Action Plan for Scotland (2011) www.jitscotland.org.uk/action-areas/telecare-in-scotland/
[19] Empirica/WRC (2008) ICT & Ageing: European Study on Users, Markets and Technologies http://www.ict-ageing.eu/?page_id=1310
[20] www.sctt.scot.nhs.uk/

By 2014 a new health and social care IT strategy will have been developed in partnership with local authorities. This will have paved the way for improvements in information sharing between health and social care workers and greater integration of health and social care services, for people of all ages, across Scotland.

By 2014 the ePCS and KIS will have been rolled out nationally across Scotland for those who need it.

4 To enhance the availability of appropriate information for healthcare workers and the tools to use and communicate that information effectively to improve quality.

Information, and particularly patient information, is a vital tool for NHSS; the effectiveness and safety of health care services depends on it. We have a duty to use patient information well, responsibly and with care.

Improved clinical availability of patient information is particularly important as we work towards our quality ambitions for healthcare services in Scotland. It is essential that all healthcare workers have access to the appropriate information when required. Appropriate information may include not only clinical information relating to a patient's medical conditions, but information on their ethnicity, any special needs or requirements and their wishes. Improvements in the quality and availability of patient information that healthcare workers receive will enhance patient safety and effective clinical treatment, with specific benefits including:

- the availability of person-centred, not system centred information
- clinical information being available at the point of care to improve clinical decision making
- more up to date and complete patient records
- reduced harm to patients due to increased knowledge of medical information
- a reduction in unnecessary duplicate tests; and
- increased support for joint working across NHS Boards

There will also be efficiency savings in terms of how healthcare services are delivered. Expected benefits include:

- less time spent looking for and retrieving clinical information
- reduced reliance on paper based systems
- the potential for single sign-on to multiple clinical systems
- the potential for simultaneous access by healthcare teams; and
- less need for replication and synchronisation of large data stores, as information is accessible from multiple systems on demand

Martin Egan, NHS Lothian's Director of eHealth said:
"I believe that the delivery of a feature rich clinical portal will significantly enhance care delivery across the region and will make much more effective use of clinicians' time within front line patient service."

NHS Boards are doing this via

increased use of portal technologies (windows to electronic information); a single sign-on entry point through which various parts of a patient's information record can be assessed securely. We envisage integration platforms being essential in making this happen across Scotland.

Our vision includes all territorial Boards using portal technologies (or electronic windows to information) and the priority information items agreed by clinicians being available at the point of care.

Making it real- West of Scotland Electronic Renal Patient Record
The Strathclyde Electronic Renal Patient Record (SERPR) was implemented in 2010. It is hosted and managed by NHS Greater Glasgow and Clyde. Other Boards involved in its development and implementation are: NHS Lanarkshire, Ayrshire & Arran, Forth Valley, Dumfries & Galloway and Golden Jubilee. SERPR delivers a number of clinical benefits including: laboratory data for new patients available in 10 to 20 minutes; patient demographics uploaded instantly; reduced reliance on paper case notes; easier and faster data entry for clinical staff; and a unified system across 6 Boards enabling greater information exchange.

It is vitally important that people who receive healthcare services have confidence in eHealth systems and procedures to respect their privacy and handle their information properly. Single sign-on and audit tools are two key elements of the Information Assurance Strategy, and essential components of portal technologies (and electronic windows to information). Single sign-on removes the need for clinicians to enter multiple passwords to use different systems. Rules on who can access information are in place. NHSS organisations have monitoring systems in place that can identify who is looking; what they are looking at and where and when this activity takes place.

Over the course of the strategy all territorial Health Boards will have introduced single sign on for healthcare workers and have privacy breach detection tools, and we will have implemented an agreed Information Assurance Strategy and associated programme of work.

The Quality Strategy contains a commitment to recording and transmitting the additional needs of people using health services throughout NHSS, as part of the NHSS's commitment to understanding the needs of different communities[21]. This additional needs information has been set out in the Equality Act 2010[22] and has an important role in eliminating discrimination, reducing inequalities, protecting human rights and building good relations by breaking down barriers that may be preventing people from assessing the care and services they need, as well as meeting the new public sector duty[23]. Health will assess IT options in support of this equality duty, and

[21] Quality Strategy – http://www.scotland.gov.uk/Publications/2010/05/10102307/8
[22] Equality Act 2010 - http://www.equalities.gov.uk/equality_act_2010.aspx
[23] The EHRC has produced Interim advice for Scotland available at http://www.equalityhumanrights.com/scotland/public-sector-equality-duty/interim-advice on-the-equality-act-scottish-specific-duties/.

the List of Actions and Provision to support the patient pathway that has been developed[24].

eHealth has the potential to enable improvements in communication and integration between primary and secondary care providers and between NHSS and community based care. The availability of information is fundamental to effective care integration.

By 2014 all territorial Health Boards will be using clinical portals (or electronic windows to information) and the priority information items agreed by clinicians will be available at the point of care.

By 2014 work to implement an agreed Information Assurance Strategy will be well established.

5 To improve the safety of people taking medicines and their effective use

Medicines reconciliation (MR) ensures that all the medication a person is currently taking is correctly documented at each transfer of care i.e. when admitted to hospital, moving to different clinical areas within a hospital or at discharge into the community. It has been introduced with varying degrees of success across NHSS through the Scottish Patient Safety Programme, which has a target of 95% for accurate medication history documentation and recording within 24 hours of admission to hospital. Inaccurate documentation can result in the potential for missed dosages of key medications, delays in the start of new treatments and in identifying drug interactions and allergies; inaccuracies which may then be transferred to the GP or care home on discharge. They are often discovered by pharmacists, though not necessarily within 24 hours. The Scottish Government, through the Quality

Making it real – the Discovery Project in Lanarkshire

In spring 2010 NHS Lanarkshire ran a pilot project on ECS use in scheduled care. The objectives were to fully evaluate, and capture the benefits and clinical impact from the use of ECS in the management of elective patients in hospitals. In the clinical opinion of the practitioners access to this information prevented harm to 23 patients. Had this information not been available, these patients would have required monitoring to confirm that no harm had occurred and/or required intervention to prevent harm. In 3 patients it would have contributed to or resulted in temporary harm. Most of the harm prevented arose from failure to continue all prescribed medication on admission to hospital, including treatment for chronic conditions. There would also have been the potential to prescribe interacting medicines. Pilots have taken also taken place in NHS Lothian and Tayside to evaluate the potential improvements to patient safety in non emergency admissions and outpatient clinics.

[24] These actions and provisions have been grouped into 3 categories: those considered essential (List A); those relating to patient presences (List B); and those that we would expect to be delivered through normal NHSScotland provision but that healthcare workers may prefer to be altered to (List)

Alliance Board[25], has prioritised improving the quality and safety of practice around MR for unscheduled and scheduled care of the elderly to reduce adverse events at the point of admission and discharge.

It is important that the process of MR implemented is effective 24 hours a day, 365 days a year. It is also important that MR can be completed by the appropriate healthcare workers, that it is undertaken within 24 hours of admission to hospital and that the requirement for pharmacist interventions are reduced. The elderly population is at greatest risk of medication related problems because of age related physiological changes, the presence of multiple chronic diseases and conditions, and the types and numbers of prescription and non-prescription medications they consume (polypharmacy).

The Emergency Care Summary (ECS) contains patients' prescription information and information on any allergies. It is intended for use by healthcare workers in an emergency and OOHs, and it is now a vital part of MR at the interface between primary and secondary care.
The ePharmacy Programme is exploring the potential benefits from sharing information on what has been dispensed for a patient, alongside what has been prescribed, through the Pharmacy Care Record, held in community pharmacies, to assist in MR. This helps ensure that the information available on the ECS is a more accurate a record of what medication people are actually taking.

Enabling summaries of patient medication available on admission to scheduled care will be vital in enabling NHSS to meet its MR goals.

Staff Survey Comment, Discovery Project in NHS Lanarkshire:
"ECS is probably the best tool available for healthcare professionals to support the medicines reconciliation process. Although there are limitations with the system, I believe that ECS contributes significantly to patient safety and is a convenient, responsive system that has a built in auditable record of which records have been accessed and by whom. It should be rolled out wherever there is a need to perform medicines reconciliation".

Making it real – NHS Tayside incremental discharge letters and medicines reconciliation:
An in-house electronic discharge letter system is being developed and rolled out across the acute hospitals in NHS Tayside. It will cover all patient groups irrespective of ward or speciality. The system is linked to the ECS, which provides information on medication from GPs and allergies. Medicines reconciliation is undertaken and recorded when a patient is admitted and it is possible to stop medications and add new medications to the list that appears on the discharge letter with the ECS imported/altered medications. All 69 GP practices receive the letter electronically using Electronic Document Transfer.

Our vision for 2017 includes improved communication and reconciliation across all transitions of care, and making electronic patient medication summaries available to appropriate healthcare workers in both scheduled and unscheduled care. As a priority we will explore with stakeholders how a shared common electronic medication summary can be made available to

[25] http://www.scotland.gov.uk/Topics/Health/NHS-Scotland/NHSQuality/QAB

healthcare workers through the use of portals, electronic windows to information and/or web based technologies.

ePrescribing systems are widespread in primary care, with almost all GP generated prescriptions in Scotland now coming from GP IT systems and by April 2012 all GPs in Scotland who were using GPASS will have migrated onto the two nationally procured IT systems. In secondary care they are, as yet, less widespread though the number of systems in use is growing. Some Scottish hospitals have implemented systems that only undertake one part of the process – for example, support for MR on admission or discharge prescribing. There are other situations, such as in oncology or critical care, where specialised systems are used, tailored to the very particular needs of these patients.

Making it real – HEPMA in NHS Ayrshire & Arran

HEPMA been implemented, in Ayr and Biggart Hospitals on a ward by ward basis and covers prescribing, nurse administration, dispensing, medicine supply and prescribing at discharge. It is used in real time at the bedside and provides support to guide prescribing choices, allergy alerts, and formulary choices. Benefits include: identification of high risk medicines, targeted antimicrobial management, fewer missed doses, fewer transcription errors as the points of transcription are reduced to a single point, medicines reconciliation throughout the patients stay and improved communication with the GP. Since implementation over 64,000 individual patients has been registered, many having multiple admissions, in excess of 2,600,000 medicines have been prescribed; over 13,500,000 medicines have been administered

The Scottish Parliament[26] and Audit Scotland[27] have urged the Scottish Government to roll-out a Hospital Electronic Prescribing and Medicines Administration (HEPMA) system across Scotland. HEPMA supports the prescribing, ordering, administration, reconciliation and supply of medicines, as well as supporting a robust audit trail and enabling greater standardisation of practice. The agreed national approach to HEPMA was that a national procurement to provide the capability for all NHS Boards to move to full HEPMA functionality would be carried out. This was delivered in the national PMS procurement and the system chosen was the same one that has been implemented

Making it real – medication management in NHS Forth Valley

eWard is used to record medicine reconciliation on admission. As part of service re-design, eWard has facilitated more efficient and effective use of the pharmacy workforce allowing patients that need their medicines reconciled to be targeted within 24 hours of their admission. In addition, eWard delivers reliable medicines reconciliation on discharge, providing information on medicines to be continued and stopped to the GP within 6 hours of a patient's discharge. It has also streamlined the prescribing and dispensing of discharge medication, providing a more person centred, responsive service

[26] http://www.scottish.parliament.uk/s3/committees/publicAudit/or-09/pau09-0902.htm

[27] www.audit-scotland.gov.uk/docs/health/2009/nr_090416_managing_meds.pdf

across a range of acute sector wards in NHS Ayrshire and Arran. HEPMA is currently available as an optional module for Boards in the PMS contract.

A number of Boards are developing business plans to implement HEPMA in secondary care settings. In many of these cases an incremental approach to implementation is likely to be adopted, with initial focus on higher risk patient groups. The longer term vision is for all Boards to implement HEPMA with integral clinical decision support and interfaces to other clinical IT systems, such as laboratory systems.

A short life working group has been established by the eHealth Strategy Board to balance the shorter term objective of improving MR with the longer term medication management objectives of HEPMA against a reduction in the capital available for eHealth developments. The Group has been asked to: consider the needs of all stakeholders in the medicines process; focus on pragmatic and incremental solutions, including better use of what exists; and consider a range of incremental options leading to full HEPMA implementation (based on the nationally available system). The group will report back to the Strategy Board in late 2011.

We will implement the recommendations proposed by this short life working group.

People on lots of medication who fail to take prescribed drugs at the right time and right dosage risk their health and independence. They can end up being re-admitted to hospital or placed in residential care for their own safety. This has considerable cost implications for health and social services. The roll out of the Chronic Medication Service (CMS) as part of the community pharmacy contract in Scotland aims to improve patient care through a systematic approach to the pharmaceutical care of patients with LTCs by improving a patient's understanding of their medicines, maximising the clinical outcomes from therapy, minimising adverse drug reactions and addressing existing and potential problems with medicines. The Pharmacy Care Record (PCR) supports community pharmacists in providing CMS through the development of an individualised pharmaceutical care plan, a copy of which is given to the patient.

We will support Boards to improve effectiveness of prescribing by reducing variability in prescribing patterns and promoting compliance with best practice guidelines.

eHealth (specifically telecare) can make a difference through supporting people in their homes to live independently and take their medication appropriately. This is very important where people are on numerous medications for the same or different conditions and where people are elderly, have complex or multiple health conditions, and/or have disabilities. Home care visits and telecare services, such as telephone prompts, dosset boxes, calendar clocks and talking labels can be used to ensure medication is taken. They can not only bring about significant improvements in the quality of life for individuals and their families, but deliver important efficiency gains for health and social care providers; helping to reduce waste and ensure that medicines are used effectively.

Making it real – pill dispensers assisting in the management of medication in the people's homes

The dispenser is programmed with dosage and times. An alarm sounds to prompt the user to take their medication and the dispenser will allow only the tablets for that specific dose to be available. If the medication has not been taken, the dispenser reminds the user that a dose is due. An alarm will sound if the medication is not accessed within the following hour. Where the dispensing equipment is linked to a call handling and monitoring service, the alert allows appropriate follow up action to be taken. Some services also use text alerts to mobile phones as a medication prompt. One Renfrewshire user, who previously had numerous hospital admissions due to overdoses, has been maintained at home for a lengthy period without any admission to hospital.

By 2014 we will have enabled an accurate and up-to-date electronic medication summary to be available to the appropriate healthcare workers involved in a patient's journey through the healthcare system.

6 To provide clinical and other local managers across the health and social care spectrum with the timely management information they need to inform their decisions on service quality, performance and delivery.

Information is vital to improving quality, both when looking for areas where improvements can be made and when feeding back on progress. It also has an essential wider role in making possible high quality research and development.

Making it real - Evaluating the impact of Scotland's smoke free legislation

Scotland was the first country in the UK to implement a ban on smoking in public places. Prior modelling work and evidence from other countries indicated that such a ban was likely to reduce second-hand smoke exposure, with a consequent reduction in morbidity and mortality from heart disease and other causes. To assess the impact of the ban on hospitalisations for childhood asthma, researchers at the University of Glasgow used the Scottish Morbidity Record (SMR01) linked dataset to ascertain the numbers of admission and deaths attributable to asthma before and after the ban was introduced in March 2006. This study, the first nationwide study anywhere in the world of the impact of smoke free legislation on childhood asthma, found that admissions fell by 18% following the ban, compared with a 5% annual reduction in the years before the ban.

Scotland is an acknowledged leader in the use of eHealth records for research. Existing systems for linking individual patients' hospital records have supported a wide range of ground-breaking population health and clinical research, and this has generated intense interest, in Scotland and elsewhere, in extending linkage to other health records, such as primary care and prescribing data, and to non-health records, such as education, income, Census and survey data. Research using routine data has huge advantages in terms of cost, population coverage and reduced burden on research participants, but to realise this potential, further innovation is needed in our approach for indexing and linking records, storing the resulting datasets, and

making them accessible to researchers within a streamlined, efficient and secure system of research governance.

We will ensure that we participate fully in UK developments, including the linkage of Scottish UK Biobank participants' health records, and the development of a UK-wide network of e-health record research centres.

We will also examine different approaches to incentivise research within NHSS, building on the work of NHS Research Scotland, so that Scotland becomes an even more attractive location for inward research investment. In order to achieve this, **we will establish an eHealth research and innovation advisory group.** It will be the responsibility of that group to develop its scope and programme of work.

Real time and near real time local data has an important role in supporting local decision making and quality improvements. **As an early priority an action plan will be put in place to support real-time local performance monitoring.** This will describe options from quick but high value initiatives about new presentation of data to longer term initiatives about Boards analysing their own data and presenting it to decision taker in ways that improve quality, efficiency and safety. This framework will be developed in partnership with Boards' IT and Information Managers and will build on excellent work already underway in Boards and ensure that the lessons learned from these initiatives can be shared with others.

In the first instance **our activity will be focused on the acute sector** (territorial Boards, the Golden Jubilee National Hospital and the State Hospital) and the Strategic eHealth Fund will be used by these Boards to ensure that their clinical managers and appropriate local managers have the timely management information they require to inform their decisions on service quality, performance and delivery.

In addition, the National Information and Intelligence Framework for Health and Social Care for Scotland 2012-17 will inform eHealth strategy developments. It will establish a framework for the collection and development of information which will help Scotland ensure that information and intelligence meets the needs of key policy developments, such as the Quality Strategy, Getting It Right For Every Child (GIRFEC), Integration of Health and Social Care, Reshaping Care for Older People and the Carers' Strategy as well as the needs of the NHSS, Scottish local and national government and our wider partners.

By 2014 we will have established an eHealth research and innovation advisory group

By 2014, the local use of information for quality improvements will be enhanced by the eHealth Programme developing a strategy for real time and near time performance data

By 2014 the NHS Boards which are active in the acute sector will have in place systems which provide their clinical and other managers with timely management information

Annex 1

Summary of our performance against actions and aims for the eHealth Strategy 2008-11

What	By When	How We Did
Exploit and improve what exists		
SCI Gateway and SCI Store will be further consolidated and standardised, with priority given for the 18 week waiting times programme	Targets and programme of work to be agreed by September 2008	Work completed in 2009
Definition and delivery of a Child Health summary	Specification and proving work completed by the end of 2008 and roll-out thereafter	Specification completed and consulted on in 2009. Implementation options put to Clinical Portal programme
Mental health: short term focus on eHealth support for Mental Health benchmarking Programme and Integrated Care Pathways. In longer term it is expected that PMS will provide facilities to further support mental health	Short term targets and programme of work to be agreed by September 2008	Analysis of requirements and PMS completed, with ongoing engagement of stakeholders
ECS service will be enhanced through additional items of patient information and a wider user base.	Subject to stakeholder and business case acceptance, progressively introduced over 2008-2011	Palliative Care Summary development work completed and now being rolled out. Pilot of scheduled care ECS access completed, case for roll-out in preparation.
Programme to deliver eHealth support to community health and social care focused on NMAHPs.	Progressive improvement targets agreed with each NHS Board, through to 2011	Ongoing support for development and roll-out of MIDAS system
For telehealth and telecare, priorities will be to support home based care for managing long term conditions, delivery of care in remote and rural settings and improved ways of addressing unscheduled care	Throughout the period of the strategy	SCT reviewed resulting in move to NHS24 and strategy under development. Funding continued for telehealth and telecare.
Continue to develop and deploy “change and benefits” methods to help ensure that the potential of our new and existing	Throughout the period of the strategy	Benefits focus built into governance mechanisms such as business cases

systems is fully reached		
Significant procurements or developments		
Led by NHS National Services Scotland, the technology which delivers the national CHI index for patient identification will be modernised and the service improved	Complete by end 2009	Further consideration given to this strand of work, with working group now completed consideration of best way forward
Led by a consortium of NHS Boards, national procurement of a suite of products known as Patient Management System	Contract in place by spring 2009, roll-out thereafter, live in 3 Boards by 2011	PMS procurement was completed in 2009 and is live in NHS Borders. Subsequent 4 Boards scheduled and in advance preparation
Led by NHS Tayside, national procurement of products and services for user identity management and Single Sign-on – the Clinical Portal	Contract in place Spring 2009, roll-out thereafter, live in 3 Boards by 2011	Original approach revised, resulting in national procurement of Privacy Audit Tool and Single Sign-On products
Plan a managed transition from GPASS based on choice resulting from a national procurement. See also community NMAHP action below.	Contract in place summer 2009, roll-out thereafter with a date to be agreed for migration of last GPASS Practices	Roll-out well underway in all NHS Boards
Complete the business care and take decisions around the proposed national HR system	By September 2009	Programme Boards approved EESS business case. NSS is leading on the development of the system
Further planning		
Safeguarding information confidentiality: an upgraded information assurance policy and implementation plan developed	Complete by Spring 2009, implementation thereafter	Draft strategy approved, Spring 2011
Assuring eHealth patient software safety: agree action plan for mechanisms	End 2008	Considered by the eHealth Programme Board and existing procedures acknowledged
eHealth Support in Long Term Conditions: action plan developed which will include ‘patient eHealth’	Complete by end 2008, implementation thereafter	Patient Portal now live and under evaluation in Ayrshire & Arran. Ten LTC focused projects funded and underway
General: strategies and associated plans developed for	Complete by the end of 2008	Draft strategies and plans awaiting approval, Spring

ICT applications, technical architecture and finance of eHealth		2011
Support for delivering the strategy		
Establish eHealth support for improvement collaborative in each NHS Board, including common support team. Priority focus for 18 week waits.	By end 2008	Support provided and objectives met.
Develop a strategy for improving the professional skills of our eHealth staff	By end 2008	Ayrshire & Arran commissioned to take this forward. Work approved and is being implemented locally
Develop an eHealth finance strategy in collaboration with NHS Boards		Finance Strategy 2008-11 published summer 2008.

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