1 Introduction

1.1 Recent and current healthcare policies require the healthcare service to adopt and utilise new modalities to support the transformation of healthcare services. Just as in service delivery, this transformation is also expected within the context of the delivery of training and education. There is now considerable interest in how new learning technologies can be of benefit to the healthcare service.

1.2 A wide range of initiatives have been implemented around e-learning, simulation and skills laboratories, many of which have been locally developed. However to encourage and plan the wider adoption of such developments the National Workforce Group (NWG) has published a a strategic framework document, 'Supporting Best Practice in e-learning across the NHS - November 2005'.

1.3 A key proposal within this framework is the development of a road map which will establish how healthcare services could develop a consensual approach towards the adoption and deployment of e-learning, to ensure maximum appropriate use of these modern learning initiatives with minimum duplication or waste.

1.4 This report, 'Modernising healthcare training: e-learning in healthcare services', reviews current and emerging e-learning initiatives within the healthcare sector. It sets out a road map for best practice, and describes a collaborative approach with clear leadership and governance arrangements to underpin the development of e-learning in the healthcare service.

1.5 The main dimensions and deliverables of the project are to:

- Scope the development and delivery of an overarching national e-learning road map for the health service, to include learning methods such as simulation and skills laboratories.
- Include the devolved administrations.
- Evaluate the currently available and emerging e-learning platforms, learning management systems and approaches to delivering quality assured content.
- Prepare an investment plan outlining both financial and quality benefits, including comparison with potential commercial providers.
- Recommend national governance arrangements.
- Work closely with the joint sponsors (members of the Advisory and Operational Groups).
2.1 There is considerable interest in how new learning technologies can be of benefit to the healthcare sector. The need to realise these benefits is now compelling, given the challenges of sustaining improvement in healthcare services, which must be underpinned by workforce redesign, ensuring effective workforce capacity and capability, and securing best value from the significant investment the health and care services make in training and education.

2.2 The health and care services have implemented a range of initiatives around e-learning, many of which have been locally developed. Most recently, the National Workforce Group (NWG) has published a strategic framework document, 'Supporting Best Practice in e-learning across the NHS - November 2005'. The framework identified a clear need to develop a road map to encourage and establish the wider adoption and deployment of e-learning across healthcare services.

2.3 This report, 'Modernising healthcare training: e-learning in healthcare services', reviews current and emerging e-learning initiatives within the healthcare sector. The findings and recommendations made in this report have been developed using an extensive methodology that included engagement with key stakeholders and early adopters, and an analysis of strategic and operational elements essential for the effective management and deployment of e-learning.

2.4 We have seen some truly radical e-learning initiatives that are making full use of new learning technologies to transform the healthcare curriculum and its assessment. Such initiatives are drawing on leading-edge, service wide knowledge and expertise. Delivering not only fit for purpose, high quality learning solutions to scale, they are also driving up standards by providing greater consistency and reliability in terms of learning quality and experience. Some are already attracting international acclaim and have extensive commercial potential.

2.5 Assessment is becoming more closely related to learning and more genuinely competence based, instead of being limited to one off, time-fixed measurements. Using e-learning, skills laboratories and simulators, judgements about competence are more robust because learners can be exposed to a wider range of assessors and to more demanding assessment processes. These approaches have the real potential to transform the delivery of learning across the healthcare sector, and must be the model for commissioning future Higher Education (HE) and Further Education (FE) learning provision.

2.6 It has also become clear that real leadership in learning has emerged across a diverse range of organisations. These leaders are using the challenges the service is facing to develop new and transformational learning solutions. It is imperative that we do not lose this momentum.

2.7 Within this report, we set out the road map for sharing best practice, and describe a collaborative approach with clear leadership and governance arrangements to underpin the development of e-learning in the healthcare sector. The key strategic strands and the required associated actions can be seen in Figure 2.1 - the enlarged road map is set out in more detail in Section 7.
2.8 The report explores each of the issues identified within the road map, and offers a clear rationale for the inclusion of each issue and the relevance of the actions to be taken.

2.9 Given the current climate for change, the imperative of securing best value from investments, the potential and increasing ubiquity of new learning technologies, the need for safer methods of education and the potential for the healthcare service to learn and benefit from the experience of other public sectors' deployment, the time is right for healthcare services to systematically plan and encourage the wider adoption of e-learning. Inescapably, given the wider transformation of education and training, e-learning has to become an integral component of learning delivery.

2.10 Based upon the experience of early adopters, and analysis of the wider evidence, we assert that the critical issues that must be addressed if the health and care services are to benefit from e-learning can be summarised as follows:

- There is an urgent need to establish a high-level management group that includes high level sponsors and key stakeholders, to lead and drive this agenda forward.
- There is an immediate need to bring the leaders and early adopters from the healthcare services together, to cement the desire to collaborate and share their already extensive best practice. This collaboration will only work effectively if a clear project is defined that allows all parties to work collaboratively.
- A national quality assurance group must be established, with a clear remit to develop a comprehensive quality assurance framework for healthcare e-learning within a sustainable environment. This group should include, at the highest level, parties involved in developing, delivering and using e-learning materials and services.
- The healthcare service must focus on developing robust interoperability standards between systems and content development if the benefits of high quality learning experiences, reporting and information management capability, and investment in current and future developments are to be both protected and maximised. It is essential to establish a standard interface specification between the Electronic Staff Record (ESR), the (e) Knowledge and Skills Framework (e-KSF) and e-learning delivery platforms (including Virtual Learning Environments - VLE) as soon as possible. This will enhance the potential value of the current systems and will stop the proliferation of different approaches to linking ESR and VLEs.

- Commissioning and contractual arrangements should be used to ensure that the service achieves the learning solutions it requires. We recommend the development of a unified approach to commissioning e-learning material, to ensure efficiency and best value from commissioning processes, and to avoid duplication and repetition. There is currently real potential for the healthcare service to adopt the commissioning framework agreement being pursued by other public sectors.

- In order to develop the longer-term business case for e-learning in healthcare, some relevant principles of impact measures and assessment will need to be agreed and established.

2.11 We contend that, unless the healthcare sector implements a road map such as that proposed here, a chaotic, inefficient and ineffective approach will surely result. Inevitably, this will be to the detriment of all healthcare services and their users.

2.12 This need not be the case. With clear and determined leadership, and the appropriate level of financial investment, the healthcare sector can reap the huge benefits anticipated for e-learning and its associated activities.
Methodology

3.1 This report and the proposed recommendations have been developed following an extensive review of developments and research with key stakeholders.

3.2 The methodology for the study, developed to deliver the brief set out in section 1, is as follows:

- Extensive desk based research based on key material supplied by the project group. (Appendix 1)
- Desk based research based on supplementary readings identified by the project team from other non-healthcare environments. (Appendix 1)
- Structured interviews with a wide range of individuals and organisations identified by the project group as having comprehensive, relevant experience. (Appendix 2)
- Supplementary interviews with relevant individuals from related environments identified by the project team. (Appendix 2)
- All interviews were conducted using a comprehensive questionnaire (Appendix 3) designed specifically to:
  - Address the requirements of the study.
  - Enable the sponsors to recognise and tackle from the outset any issues that could be major barriers to implementation.
- Examination of the existing initiatives within healthcare services to identify initial Return on Investment (ROI) models and options.
- A top level comparison with British Petroleum (BP), a FTSE 100, non-healthcare organisation from industry experienced in the implementation of e-learning, to determine whether models of good practice have been established.
- Continuing dialogue with the project board and advisory group.

3.3 Given this approach we are confident that the recommendations made are grounded, coherent and, if accepted, will significantly enhance the ability of the NHS to benefit from the potential offered by these new technologies.
4 The Contextual Factors Driving the Need for Change and the Use of e-learning

4.1 We asked interviewees what they thought the healthcare service would look like in three to five years' time and, as a subsequent question, how they thought healthcare services should respond to the learning challenges. They were then asked what they believed are the main challenges for e-learning. This synthesis of interviewees' responses provides the contexts within which the subsequent sections and paragraphs are read.

4.2 Change is being driven by the economics of delivering a 21st century healthcare system. Strong leadership and management are seen as fundamental to the success of the change process, which will be based on new high quality strategic management of commissioning and market development. Workforce and organisational re-design will be crucial, enabling the service to respond more effectively in the new customer driven environments where expectations are higher and people want more personalised, responsive care. As one interviewee put it, "the right competences will be the right set for the patient".

4.3 Some see financial problems as being the main determinants of what will happen. These would place pressures on resources for learning, although money being tighter should assist in the adoption of e-learning.

"e has to be on to a winner. A five day training course off the job - a loser."

4.4 e-learning was seen to support streamlining, cost effectiveness and economies of scale. These benefits need to be set out in a rigorously argued business case. There was widespread anxiety about loss of healthcare service intellectual capital and the need for more systematic approaches to copyright. We saw examples of e-learning which have undoubted commercial potential, and interviewees were keen that the healthcare service achieves a return on its current investment in learning.

4.5 Some saw increasing service segmentation in relation to powers of purchase and decision making; developing the staff/workforce and in addressing local needs. There was concern that a wider supply of providers would mean fragmentation of services and loss of the collectivity that people recognised as the NHS. In response to the same issue, a different interviewee thought that "If there was a 'glue', then it has to be 'e' (learning)".

4.6 The need to start building leadership capacity throughout organisations was seen as particularly important in the context of learning, which must be 'the engine room' of change. Lifelong learning was seen as vital to a vibrant service. As another interviewee described it,

"We need learning that spreads like wildfire. The traditional approach doesn't work".

4.7 Change must be integral with learning, not separate from it. Learning has to be designed that is fit for purpose, which 'does the job'. It needs to be contextualised, embedded, connected and integrated as part of the solution, offering people solutions that they can use in their everyday lives. There is cynicism in the healthcare services about learning that is not fit for purpose or practice, but fit for award.

4.8 As the workforce becomes more distributed, so professionals are recognising the need to develop learning solutions to match. Interviewees made connections between the standards that underpin e-learning design, delivery and assessment, and their potential to embed the values and standards that are necessary for ensuring that patients can expect and receive comparable service standards everywhere.
Many interviewees highlighted the ways in which the wider systems' change will demand new working relationships on the ground, especially with social care. All saw this as highly desirable, offering opportunities to build on the new health communities that have developed 'bottom-up' over recent years.

There was enthusiasm among some interviewees for social enterprise providers and a real concern that services should become more patient-led. Health and social care professionals in some areas are exploring the potential for creating new integrated health and learning communities.

Changes, particularly in health technology, are making it difficult to predict how new treatments will evolve. Virtually all interviewees highlighted the need for flexibility, and the need to keep abreast of change. One approach would be to train to a certain level and then respond to change as it arises. E-learning provision linked to the new competency frameworks was thought to have particular advantages in enabling workforce planners and health providers to operate in such environments.

Interviewees recognised the challenge of delivering learning in smaller service units, and believed staff may need new competences or up-skilling to function effectively in community settings. Some saw the changes as requiring new kinds of learning, including 'bite-sized chunks' of learning, with a greater reliance on mentoring, coaching and placements.

Some saw additional possibilities offered by this approach. Overcoming traditional and professional boundaries offered opportunities to create healthcare professionals with competencies more suited to the emerging flexible and more personalised healthcare service.

Others saw the new relationships between Strategic Health Authorities (SHA) and Primary Care Trusts (PCT) as an opportunity to make services more effective. Shared services and cross service systems should produce greater efficiency. Productivity is seen as key, and this is best delivered through staff learning. As one interviewee put it, "enrich staff and they become more productive."

Another interviewee saw tensions emerging between new competition within the healthcare system and the sharing and collaboration necessary to innovate and drive up standards. She thought this could undermine e-learning collaboration. Conversely, by flagging up the issue now, e-learning could be the vital catalyst for drawing providers together, capitalising on the scale and diversity of the sector as a force for innovation and change.

Compelling examples were given of the way in which e-learning is responding to, and acting as an agent of, wider systems change. Healthcare services e-solutions are drawing on professional knowledge and expertise that are recognised as leading edge, both nationally and internationally. The innovative use of e-learning simulations, which are capable of drawing upon extensive computer modelling to develop highly detailed and complex structures, offers significant potential in widening opportunities for allowing learners to develop their understanding and skills within a safe practice environment, promoting learner confidence and enhancing patient safety.

Skills laboratories and simulators are becoming increasingly important and effective methods of learning and assessment. They play an important part in delivering the
training which, because of resource limitations, is becoming more difficult to deliver 'on the job'. They also enable learners to practise and develop hands-on skills in a safe environment, ensuring that they do not undertake procedures in the clinical arena until they are competent. They can also accelerate learners' progress by providing them with concentrated bursts of practice at appropriate points in their learning trajectories. There is a strong view that distribution of, and access to, such resources should be a regional responsibility.

4.18 The NHS already invests extensively in professional learning and learners. Engaging these professionals in e-learning content design is a no cost or low cost way of recouping some of this investment. In addition, the use of new learning technologies has enabled some of these professionals to drive development of radical approaches to learning which should be captured and harnessed.

4.19 There is a strong desire to collaborate. Interviewees were acutely aware of the need to maximise knowledge capture and development on behalf of the service, and to achieve the widest impact that such excellence can deliver through the service as a whole.

4.20 Several saw an increasing need to be able to acquire, retain and support staff who will become more flexible and mobile than at present. Staff will work in and out of the service, moving within and across the workforce. Employers will want to be reassured that, however they engage staff, they bring the right skills' sets.

4.21 Those currently entering the service, whether from school, further or higher education, will be Information and Communication Technology (ICT) literate. They will have learned, and will expect their learning, to involve use of the new learning media. However interviewees noted that learners might feel thwarted in meeting their learning requirements given that barriers to access to computers and a supportive learning infrastructure remain and probably represent the biggest barriers to the effective implementation of the use of new learning technologies.

4.22 The Knowledge and Skills Framework (KSF) is seen as increasing the need for learning, and may also act to standardise learning. Interviewees believed that the KSF will be the tool by which competing standards and frameworks will become shared.

4.23 A key element of Agenda for Change concerns the ability to demonstrate Continuous Professional Development (CPD). The service will need to be able to ensure that all staff have access to CPD and that their development is recorded consistently across all domains.

4.24 Staff development will need to be taken more seriously. Managers must become more aware of learning needs and develop processes to meet them. As another interviewee said:

"Links have to be created between learning, assessment and management, and this has to start with service managers. The notion of competence is about doing away with the distinction between learning and workforce management."

4.25 Although jobs will be designed to meet local needs, assessment should be based on competences that are standardised and transferable, thereby providing employers with a reliable measure of employability and also assisting employees to gain entry to the workforce and to progress within it.
4.26 The new curricula are increasingly modular and competence based. As one interviewee remarked:

"It is becoming a competency based world. Learning must be flexible and allow for study in people's own time. Release for learning is becoming a dying concept."

4.27 e-learning, by definition, promotes learning in a modular format, enabling people to take learning from one context and apply it in another. It enables transferability.

4.28 Interviewees had concerns about ensuring that the new independent and private providers of care are trained to the same standards, and that they can supervise students/trainees in these settings. They also questioned how the evolving service could continue to promote a collaborative approach to learning for the next generation of professionals.

4.29 The service’s role in the future was seen to be about defining standards rather than models of healthcare. Local commissioners will define local solutions but will draw on public and private, national and international solutions to meet local needs.

4.30 Standards were valued as a currency for the service. e-learning was seen to offer opportunities to support and set standards, and to drive them up. SHAs were thought to have little role in future learning delivery, but a responsibility to ensure that learning is included in any commissioning of services and contracts. There was strong support for making learning, notably core learning, part of the new PCT commissioning and contracting processes.

4.31 Many interviewees saw standards for learning as the business of the newly amalgamating health and social care inspection bodies.

"We need a national policy and funding framework backed by the various healthcare inspection bodies, against which any provider can compete."

4.32 There were concerns about how new providers of services with little experience of providing e-learning would be able to identify appropriate and quality educational services when making purchasing decisions.

4.33 In future, the Healthcare Commission will be responsible for inspecting all providers within the new health economy. Interviewees felt strongly that all providers should work to the same standards for learning, perhaps with agreed mandatory and core learning being a pre-requisite for acceptance as a provider of services.

4.34 People recognised a need to agree what mandatory learning for the service should be. Interviewees thought that all mandatory or core learning should be clearly referenced to the KSF and available as e-learning. “If something is good, keep it, kite mark it.”
5 The Political Context - Catalyst for Change

5.1 Feedback from interviewees highlighted the need for e-learning to be aligned with achievement of service objectives, the clear potential for e-learning to deliver against service targets and agendas, and to impact favourably on patient safety.

5.2 Legislation and guidance are rapidly being put in place to drive forward the wider systems change that will form the basis of service modernisation and improvement. As our research has proceeded, it has become clear that, in order for an NHS e-learning strategy to achieve maximum penetration and impact, synergies must be achieved with other relevant change programmes and review processes currently taking place. e-learning does not exist in a vacuum. For the strategy to succeed, it must continually align itself through time with the overall goals and business objectives of the service and demonstrate how e-learning is contributing to their advancement and delivery.

5.3 We have had very fruitful discussions with the national leads for the MPET Review, the Integrated Service Improvement Programme (ISIP) and the StLAR HR Plan about how such synergies might best be achieved. We have set out below the main aims and objectives of ISIP and the MPET Review and have described where our initial discussions have led us. The outcomes of our discussion with the STlAR HR Plan leads are described in 11.3 below. To capitalise on these discussions and to derive their full benefit for the service, it is vital that they are taken forward at the earliest opportunity.

5.4 Integrated Service Improvement Programme (ISIP)

5.4.1 The NHS Integrated Service Improvement Programme (ISIP) promotes collaboration across Local Health Communities (LHC), to make the most of investments in people, process, technology and other local initiatives. ISIP is an NHS-led approach to transforming patient care, reconciling local imperatives with national priorities and focusing improvements to deliver an efficient, patient-led NHS.

5.4.2 As part of the ISIP approach, each LHC has developed a community-wide Integrated Service Improvement Plan (ISI Plan). The ISI Plan is a high-level document setting out the LHC strategy for achieving their vision for local care delivery, including assessing current capabilities and prioritising strategic objectives.

5.4.3 ISIP is developing the Roadmap for Transformational Change (RTC) to support LHCs and individual organisations to plan, manage and deliver change. The development of the RTC is a key component of ISIP and will add value by suggesting a logical sequence through any change programme, and by providing NHS users with appropriate support and guidance (including the signposting of education and training) to assist project delivery and the realisation of business benefits.

5.4.4 Those involved in supporting the learning agenda, which will be essential to underpin delivery of the ISI Plan, will need to work together to ensure local learning strategies, including e-learning, adequately reflect the strategic objectives identified in their ISI Plan, as well as the need to develop skills to lead and implement transformational change.

5.4.5 During the course of our research, we have identified some good e-learning guides and toolkits (see section 6), which have been designed by SHAs to support healthcare organisations in the development of their e-learning strategies and plans. The ISIP Leads should include these guides and toolkits within the RTC resources, which have been developed to enable and support LHCs and individual organisations to plan, manage and deliver change.
5.5 The MPET Review

5.5.1 The MPET review is looking at the way NHS training is funded to ensure the funding is fit for purpose and is consistent with wider systems reform, for example Payment by Results (PbR). It also aims to provide incentives for the providers of clinical placements for trainees, particularly Independent Sector Treatment Centres (ISTC) and foundation trusts.

5.5.2 Given the current financial climate, interviewees were clear that it was not a question of there being additional resources, but of a better, more productive, use of the resources which the service has or is likely to have in the future. As finance gets tighter, so expenditure will come under closer scrutiny. We believe that a strong case can be made for e-learning, backed by use of best value criteria and evidence of return on investment.

5.5.3 Our evidence demonstrates that e-learning can play an instrumental part in helping deliver better focused investment in education to meet the challenges of delivering education within the context of a modernised service. It will be essential that healthcare services leaders of e-learning should seek to influence the MPET Review to ensure that it fully capitalises on the way in which investment in e-learning will contribute to the wider systems change that is required to support the transformation of service delivery.
We were directed to a number of key initiatives in healthcare services and these have informed the development of both the study methodology and its findings. This section captures details of some of the key developments in place.

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<tr>
<th>Initiative</th>
<th>Brief description</th>
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<tr>
<td><strong>R-ITI</strong></td>
<td>R-ITI is a collaboration between the Royal College of Radiologists, the Department of Health and the NHS. R-ITI provides an innovative learning solution combining traditional proven teaching models with state of the art technology. The Integrated Training Initiative delivers a new approach to training radiologists, increasing capacity to meet demand without putting additional strain on current resource. It will shortly be available nationally to radiologists and non-radiologists, with further e-learning potential for all sector staff. R-ITI has delivered:</td>
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<td>▪ A national archive of peer-validated cases (Validated Case Archive);</td>
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<td>▪ Over 1,000 e-learning sessions for self-paced learning &amp; knowledge acquisition, underpinned by a comprehensive Learning Management System which tracks progress.</td>
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<td>▪ Three new Academies.</td>
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<td><strong>IVIMEDS</strong></td>
<td>IVIMEDS is a worldwide partnership of leading edge medical schools and institutions working to develop the full potential of e-learning across the continuum of medical education. The aim of the project is to provide an effective means of sharing digital learning resources among partner institutions. Currently 37 leading medical schools located in 14 countries have committed financial and human resources and agreed to share learning resources to make a reality of the IVIMEDS vision. Launched in February 2004, it is intended to develop an integrated approach to undergraduate, postgraduate and continuing professional development, embracing new initiatives in multiprofessional education.</td>
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<td><strong>RCS Intercollegiate Surgical Curriculum Project</strong></td>
<td>The Surgical Curriculum Project encompasses developments on four fronts: first, the derivation of national standards; secondly the reform of the national systems underpinning training; thirdly the development of learning, teaching and assessment resources to support trainers and trainees in clinical settings; and fourthly, promotion of trainees’ development via strategies for good teaching and learning. What trainees need to know and be able to do at each stage of specialist training (early, middle and late) is described under four headings: clinical judgment; technical and operative skills; specialty-based knowledge and generic professional skills. These skills have been related to a range of key conditions - those that are common or critical - that trainees would be expected to encounter and manage at a particular stage. The ‘outcome</td>
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<td><strong>ProjectISCP</strong></td>
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standards’ are the basis on which the rest of the curriculum is built. More detailed information about the RCS Curriculum Project generally can be found on the RCS curriculum website

http://curriculum.jchst.org

The core learning programmes were developed by the NHSU. In 2005, South Yorkshire SHA agreed to host the core programmes, and North East Yorkshire and North Lincolnshire SHA agreed to support the e elements of the programmes.

The e-learning site contains the following programmes:

- Infection Control.
- Statutory & Mandatory.
- Fire Safety Awareness.
- Health & Safety Awareness.
- Manual Handling.
- Infusion Devices.
- Introduction to today’s NHS.
- Working for the NHS.

In March 2005, it was estimated that the core programmes accounted for over 50% of NHSU’s 103,800 recorded learners. The CLPU is responsible for the maintenance and development of the core programmes. Several of these packages have been accredited by national agencies, for example health and safety has been endorsed by the Health and Safety Executive. Work is under way to use the programmes to develop a formal accredited Common Induction Award

http://www.clpu.nhs.uk

The e-KSF tool supports all aspects of the KSF development process for NHS organisations. It is an internet-based system that allows organisations to manage the creation and storage of KSF post outlines, and allows reviewers and their staff both to store information about how the individual compares with their outline, and to record personal development plans. The e-KSF will be a vital tool in supporting workforce competency development.

e-KSF has mapped each KSF statement to relevant National Occupational Standards and to relevant professional standards. Work is under way to ensure interoperability between the e-KSF and Electronic Staff Record which is currently being implemented (see 9.3.4 below).

http://www.e-ksf.org.uk
| GP Notebook | GP notebook provides a synopsis of the entire field of clinical medicine focused on the needs of the General Practitioner. The database is continually updated by a team of authors. It uses a range of knowledge sources, including clinical experience, literature reviews, original research articles and guidelines published by national and international bodies. |
| Health Care Skills | These comprise a range of e-learning programmes for the Foundation years of Modernising Medical Careers (MMC). They are delivered in small learning chunks of 2.5 - 3 hours. They are free to NHS staff and include courses on: |
| National Electronic Library For Health NeLH | The National Electronic Library for Health aims to: |
| | - Deliver a modern, equitable library service to all NHS staff.  
| | - Extend NHS library services to patients and the public for the first time.  
| | - Be built around user needs.  
| | - Integrate library services with Connecting for Health and other services.  
| | - Simplify access arrangements for students and staff working partly in the Higher Education (HE) and Further Education (FE) sector.  
| | - Reach NHS staff who do not regularly use NHS library services.  
| | It offers e-access to: |
| | - Specialist libraries e.g. Cancer, Musculoskeletal, Oral Health.  
| | - Guidance e.g. NICE Guidance.  
| | - Clinical Evidence etc.  
| | - Clinical Databases e.g. Medline, Zetoc.  
| | - Journals and Books.  

http://www.gpnotebook.co.uk/homepage.cfm

http://www.healthcareskills.nhs.uk/

http://www.nelh.nhs.uk
| NHS and Social Care e-learning Resources Database | This database has been developed as part of a national project between Strategic Health Authorities (Workforce Development) and NHSU. Its purpose is to capture and share details of e-learning projects being undertaken within the NHS and Social Care. Accessing this database is intended to:  
- Share details of how e-learning is being deployed within the NHS and Social Care.  
- Promote good practice.  
- Share details of lessons learned in implementing e-learning developments.  
- Prevent duplication.  
- Encourage the potential of shared developments and maximise investment.  
  
http://www.nhselearningdatabase.org.uk/  

| NHS SHA e-learning Leads Network | A human network established to drive forward the e-learning agenda within the NHS, which meets every 3-4 months. A valuable leadership network and test bed for obtaining views on SHA needs and plans.  

| UfI/Learndirect | University for Industry (UfI) through its Learndirect brand has approximately 10 Careconnect centres across the UK. In 2005/2006, Learndirect activity in the health sector, both through the Learndirect Careconnect hub and regional providers, received around £5 million funding.  

In addition, Learndirect 'learning through work' is funded by the Higher Education Funding Council for England (HEFCE), through Higher Education Institutions (HEI), often with fee remission paid by employers.  

Nationally, UfI receives its funding for Learndirect courses from the Learning and Skills Council (LSC) for England, which it then prioritises across regions and sectors. Funding is estimated to be around £175 million for the next two funding years. In addition, UfI will be tendering for additional funds in each English region to deliver 'Train to Gain', in collaboration with local and regional providers. Learndirect is funded separately for Wales and self-financing in Northern Ireland.  

UfI currently delivers 25% of all first Skills for Life National Certificates in numeracy and literacy to adults in England. UfI will contract in line with regional priorities, and the health sector is a priority for every English region. UfI is exploring within the emerging sector skills agreement how funding allocation decisions can be further developed for 2007/2008 to best impact on change for the health sector.  

http://www.ufi.com |
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<th>Toolkits</th>
<th>Description</th>
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<tr>
<td>North &amp; East Yorkshire &amp; Northern Lincolnshire Workforce Development Confederation e-learning Strategy Toolkit</td>
<td>This toolkit has been developed to help organisations identify their state of readiness to use the Managed Learning Environment (MLE) in support of the local delivery of education and training. It consists of the following 4 sections, each focused on specific areas that an organisation needs to consider when implementing e-learning: - Leadership and Change management (Section 1). - Learner Support (Section 2). - Infrastructure (Section 3). - Quality (Section 4). Each section consists of a series of questions that help identify and focus on gaps to be addressed as well as the strengths that will enable organisations to implement e-learning quickly and effectively. The responses to these questions can then be used to develop an action plan for the organisation.</td>
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<td>Delivering e-learning In The North West NHS e-learning Strategy Toolkit</td>
<td>To encourage a common approach, the three North West Workforce Development Confederations have developed a common e-learning strategy, aimed at NW member NHS organisations. To support adoption, but also ensure that the strategy has relevance at an individual organisation level, this toolkit was designed to help organisations develop their individual strategic response. It also helps organisations identify their state of readiness for supporting delivery of education and training using an e-learning approach. The toolkit uses a series of trigger questions related to key factors that need to be considered when developing an e-learning strategy. These questions help to: - Identify and focus on gaps that organisations will need to address if e-learning is to flourish within the organisation. - Recognise the potential strengths that the organisation may have with regard to the deployment of e-learning, offering the opportunity for accelerated and more effective integration.</td>
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7.1 The need for a clear road map which sets out the key elements and sequence of activities that need to be undertaken to support the wider adoption of e-learning within the NHS has been identified as a critical strategic development (NWG 2005). Based upon the feedback of participants consulted in the development of this report and our experience of the research and models of best practice that are driving e-learning development, we are able to offer such a road map. This road map is depicted in Figure 7.1 below.

7.2 The road map identifies five strands of key strategic activity and populates each strand with actions that will be required if e-learning is to flourish within the NHS. It will be noted we also set out the integrated sequence of activities that will be required over a short to long-term planning framework. We do not think it is appropriate at this point to determine the actual timings of the planning phases. This can only be decided once the leadership and governance arrangements are in place. However, given the current experience and state of some activities we are confident significant acceleration of activities could be achieved.

7.3 In the following sections of this report we establish in more detail the rationale for each of the strands, the required actions and their place in the planning sequence as included in the proposed road map.
Figure 7.1: healthcare services e-learning road map
8 Governance and Strategy Board

8.1 Introduction

8.1.1 We define governance as ‘a set of processes and standards managed by an appropriate group’. In 8.2 below we set out our recommendations for a National Governance and Strategy Board to progress the e-learning agenda within health care. In 8.3 below we identify the standards framework and where appropriate set out the actions that will create that framework against short, medium and long term timescales.

8.2 National Governance and Strategy Board

8.2.1 There was a compelling sense among interviewees that the time was ripe for action. This found expression in the almost unanimous view that national leadership of e-learning by key stakeholders is essential. Equally, because the stakes for the service are so high, interviewees were unanimous that ‘the market cannot be allowed to take care of itself’. One interviewee warned strongly against allowing the strategy/road map, and the support needed for it, to get ‘into tortuous negotiations’, thus prolonging implementation. Maintaining momentum is key.

8.2.2 There was a clear consensus that there must be a high-level leadership group to oversee and coordinate the national strategy.

8.2.3 e-learning policy and strategy implementation is not a quick fix and will not be achieved overnight. Stakeholders at all levels, but particularly members of the leadership group, must therefore act as high-level sponsors and stewards of e-learning. They must be able to navigate a way through the fast moving policy terrain that characterises healthcare services, and be capable of managing the very considerable public scrutiny and accountability that any such programme will attract.

8.2.4 Decision-makers - including politicians - must be convinced of the seriousness of the stewardship role. As one very senior interviewee pointed out:

"We are all of us only passing through. At stake is the investment in the long-term education and development of the service and in creating a workforce that is fit for purpose."

8.2.5 The UK has a unique market advantage in being able to capitalise on the very significant intellectual resources invested in its integrated health and education systems. It is only if such a case can be clearly made, that protection from changes in political leadership and policy direction are likely to be secured.

8.2.6 In common with the view set out in the DfES Harnessing Technology Strategy (http://www.dfes.gov.uk/publications/e-strategy/), interviewees favour a national framework that takes a systems' wide view, within which responsibility is devolved to the front-line. The Department for Education and Skills (DfES) and BP (consulted as an industry expert) are both in the process of reviewing their existing e-learning provision, with a view to redressing the current legacy of haphazard growth, systems’ incompatibility and the past failure to achieve necessary economies of scale.

8.2.7 This demands clarity in the scope and nature of the relationship between the centre and the service and requires careful handling. This will need to be reflected in the role and relationship of any national group with the regions and with the service as a whole. The DfES is using three tests, of which more than one must apply, to determine whether it is necessary or appropriate for government or its agencies, at national, regional or local level to intervene. Actions under scrutiny can be systems or sector based.
8.2.8 The NHS National Governance and Strategy Board would be advised to agree its own working rules as part of its governance framework. Interviewees were clear that what they wanted was standards not standardisation. As a bottom line, the Governance Board will need change strategies for developing the systems in a way that enhances the support of the main stakeholders and continues to improve the system. It should also articulate what is meant by an appropriate level of local variation and fine-tuning to local circumstances.

8.2.9 Our research showed interviewees were very concerned to ensure that change is mobilised effectively throughout the system. While interviewees saw some roles and responsibilities as being national, regional or local, they more often referred to the important relationships between national and regional, regional and local or all three. Change was seen variously to need to be delivered in a 'top down' and 'bottom up' manner.

8.2.10 High-level leadership and management of e-learning policy and strategy are absolutely essential. Interviewees experienced in taking forward high-profile, service wide systems' change programmes were adamant that what was needed was continuing and consistent high level sponsorship by key stakeholders. Therefore in deciding upon the role, responsibilities, membership and accountabilities of a lead group, the following must be considered:

- The importance of identifying a Chair whose leadership and reputation for driving forward change to challenging deadlines is widely acknowledged and respected among stakeholders. The Chair must be able to champion 'the cause' and harness the energies, enthusiasms and resources of key stakeholders.

- The inclusion of those who are recognised as leading edge in their professional area/field and can demonstrate a track record of achievement to high standards in e-learning in healthcare services - from systems design through to implementation - which is both credible to service stakeholders and to external experts in the field.

- The need to include those who:
  - Bring a clear analysis and practical understanding of current and future service policy drivers and requirements, and
  - Have first hand experience of what implementing e-learning will demand, and what it can contribute to the delivery of wider systems change and the delivery of key business objectives.

- Such members are likely to occupy high-level strategic roles, with responsibility for orchestrating, integrating and performance managing service responses and delivery of complex objectives and targets across a specific geographic or service area.

- Experts will be required in human resource and organisational development, finance and project management. They must have successful experience of implementing large-scale change to challenging timescales, know the pitfalls of doing so, and know when and how to take preventative action.

- Representatives of the key stakeholders who will be affected by the change will need to be included. Their contributions and solutions are vital to the wider credibility of the programme and to its continuing currency with the professional and wider workforce. Such representatives should be able to demonstrate the ability to make effective connections through and across the service.
In order to ensure effective and timely delivery, any national governance framework will need to identify and focus on its top priorities for action. Delay in taking action must be avoided. Recognising the rapid change in the technology environment, the framework will need to be responsive, capable of reviewing the process and renewing the strategy as necessary.

Consideration should be given to the creation of an Innovations' Fund to drive up excellence and innovation across the service. Such a fund should encourage/require joint and collaborative ventures among stakeholders.

8.2.11 The National Governance and Strategy Board would be advised first to look at the composition and impact of the current interim NHS Advisory and Operational Boards for e-learning, to identify what changes may need to be made to deliver the new strategy. This will be particularly urgent given the current health service reorganisation.

8.2.12 Interviewees experienced in taking forward high-profile, service wide systems' change programmes were adamant that what was needed was the continuing and consistent high level sponsorship of key stakeholders.

8.2.13 The consensus was that membership of this group should include the following organisations.

<table>
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<tr>
<th>Organisation</th>
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<tbody>
<tr>
<td>DH</td>
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<tr>
<td>SHA Chief Executives</td>
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<tr>
<td>National Workforce Group</td>
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<td>NHS Employers</td>
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<td>NHS Institute</td>
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<td>Connecting for Health</td>
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<td>Skills for Health</td>
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<td>Skills for Care</td>
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<td>Independent providers</td>
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<td>Voluntary sector</td>
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<tr>
<td>Healthcare service HR Director</td>
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<td>Healthcare service Finance Director</td>
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<tr>
<td>Leaders of e-learning in the devolved administrations</td>
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</table>

8.2.14 Interviewees also proposed that a national group could be the sponsor for, and guardian of, national funds to drive up excellence and innovation across the sector. There was real interest, especially among professional bodies, in sharing practice in curriculum development, e-pedagogies and assessment at the earliest opportunity. Practical arrangements will be needed to foster collaboration, including shared development test sites, and partnership networks.

**Issue:**
There is an urgent need to establish a high-level leadership group that includes senior sponsors and key stakeholders.

**Actions:**
The interim Advisory Group should propose an appropriate group structure for approval by the high level project sponsor.
8.3 Developing the Standards Framework

Short Term Actions

8.3.1 Quality Assurance Framework

8.3.1.1 Numerous respondents referred to the need to establish a comprehensive e-learning quality assurance framework in order to ensure that the healthcare service gets the e-learning provision and support required to meet the needs of the service.

8.3.1.2 The current position was summed up most succinctly by one respondent as follows:

"Currently everyone is doing bits. There is no overall evaluation. People can't assess what a good programme is, neither can organisations. This makes the service vulnerable to crooks. People can forget that Training and Development managers can be blinded by science. They don't know what to buy."

8.3.1.3 The situation is further complicated by the fact that often:

"One thing ... doesn't talk to another - systems mismatch - chaos. Can ESR talk to e-KSF? More variables, more problems."

8.3.1.4 Interviewees agreed that it is neither necessary nor desirable to develop such a framework from scratch. It is generally acknowledged that we should utilise the systems that have been developed by others in the UK and overseas, and to adapt and modify these where necessary.

"The service could:
- Adopt existing standards.
- Develop their own.
- A combination of the above.

but developing your own standards may not be sensible on many grounds: costs, transferability etc. Also we need to bear in mind that adults may not stay as learners in a single sector."

Issue:
A comprehensive quality assurance framework is required in order to develop e-learning within a sustainable environment.

Actions:
Develop and maintain an e-learning quality assurance framework. An e-learning Quality Assurance Group (EQAG) should be established to carry out this function.
8.3.2 E-learning Quality Assurance Group (EQAG)

8.3.2.1 The Role of EQAG

The role of the EQAG will be to develop and maintain systems that ensure the development and maintenance of an overarching e-learning Quality Assurance Framework.

8.3.2.2 Preliminary EQAG activities

A major function of this group will be the "kite marking" of new materials as set out in 8.3.4 below. However, as there is currently no healthcare service-wide agreement on quality standards, this group will need to seek agreement on:

- Interoperability standards (8.3.3).
- Classification of learning objects/resources.
- e-learning Technical Design Standards (8.3.3).
- Educational and Design Standards - Learning Design (8.3.5).
- Learner support standards.
- Standards for the treatment of intellectual property rights (8.3.6).
- Standards for the commissioning of e-learning solutions (8.3.7).
- Standards for the measurement of impact of e-learning solutions (8.3.8).
- Monitoring the pattern of uptake and impact of e-learning and taking action to foster its wider use.

In doing this, the group should utilise and adapt existing standards wherever possible.

8.3.2.3 Production of Guidance

Once agreement of the above standards and guidance is achieved, they will be supported by guidance notes and other resources to assist the further development of e-learning within the sector.

8.3.2.4 Composition of the group

This will need to be agreed, but we would assert that this group needs to include:

- Strategic Health/National Workforce Groups.
- Professional bodies.
- Quality managers from the service and from education.
- Educational designers from HE and FE.
- Librarians from service and education.
- Technical experts as required.
- Representatives of e-learning standards bodies from outside the health sector.
- Representatives of patient groups.

"Both learners and educators rely on high quality content to learn and to teach. e-learning content can take a number of forms, from entire online courses of varying duration, to discrete 'chunks' of learning sometimes known as 'learning objects'. Whatever its form, content must above all be relevant and quality assured." SCIE Report.
8.3.2.5 **Resources**

We have reviewed many documents that will assist the work of this group. Much of the foundation work has already been undertaken. In particular, we would commend to the group:

- Promoting Best Practice Approaches to e-learning - Cumbria and Lancashire SHA April 2004.
- Benchmarking e-learning - an overview for UK HE - a short paper by Paul Bacsish.

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**Issue:**
To develop a comprehensive quality assurance framework a national quality assurance group must be established that represents, at the highest level, parties involved in developing e-learning materials.

**Actions:**
Establish the EQAG, with a nationally agreed role and remit, within 2 months of the publication of this report.

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8.3.3 **Interoperability**

8.3.3.1 Learning technologies, the predecessors of e-learning, have evolved through many approaches (bulletin boards, Computer Based Training (CBT) systems, authoring systems, Integrated Learning Systems and Learning Management Systems) and many technical architectures (mainframe based programs, departmental computer software packages, software packages and CDs for personal computers, server based systems running over local networks and, most recently, web based systems).

8.3.3.2 Throughout this period, the development of learning systems has been undertaken by both individual organisations and individuals who have paid little attention to ensuring that the data in these systems (learning content, student records, administrative data, etc.) can survive changes in the underlying technology and/or be easily transferred from one system to another.

8.3.3.3 As the technical platforms on which this data was designed to run have evolved, a lack of standards has caused significant problems:

"Those who wrote high quality learning materials for BBC micros found them trapped on floppy disks that cannot be read by modern PCs, and even if they could, the software on them would not run."

8.3.3.4 Compensating for the lack of adherence to standards also causes unnecessary effort:

"The core learning programmes came as 'e' and weren't. They were CDs. Had to spend time 'SCORM'ing them. This means they can now be easily updated and re-framed for, say, social care."
8.3.3.5 Learning content is following the trend in the computer games industry for the finished material to become more sophisticated and consequently more expensive to produce. Given that much learning has a very long shelf life, it is important to ensure that material does not have to be re-developed at great cost when the system using the content or the underlying technology falls victim to the relentless march of technological progress.

8.3.3.6 Future predictions for e-learning indicate that each learner will have an ‘e-portfolio’ - an archive of their learning achievements. Over time this could become the equivalent of a combined CV, portfolio and qualification record. Implementation of fragmented approaches to e-learning could mean that a learner can only display their true capability within one system, being unable to move their record of achievement to another without losing key aspects or incurring significant cost/inconvenience. (The parallel can be drawn with the difficulties experienced until recently in moving bank accounts from one bank to another. Moving e-portfolios would be much more complex.) Similarly, tutors can become 'locked in' by the skills that they have developed in using a particular learning system to develop learning material, to administer/support learning or to do a combination of both. This can inhibit mobility amongst the tutor population.

8.3.3.7 To prevent this occurring, interoperability standards are needed that address all of these areas. For learning content, not only technical standards like graphics interchange formats are needed, but also formats for the way in which the packaging, sequencing, and other management of the learning software is handled, so that it can be transferred between platforms and environments. Likewise, standard ways of describing educational materials are needed so that they can be easily searched for and located.

8.3.3.8 Administrative systems need to agree on what information to save and how to save it, so that it can be transferred to other administrative systems, and to non-administrative systems such as virtual learning environments, wanting to use this information. Getting this agreement is easier said than done.

8.3.3.9 At the minimum, interoperability is needed across healthcare services. However, adults may not stay as learners in a single sector and, if patients are also brought into the system as potential learners, there are compelling arguments for seeking interoperability beyond an internal healthcare service system.

8.3.3.10 In this regard the options for healthcare services are distributed along a continuum. At one end is the option to adopt common standards and maybe participate in their onward development. At the other end is the option to develop a set of specific internal standards in isolation. In between is a range of options involving combinations of common and internal standards.

8.3.3.11 The NHS is a large enough organisation to realistically contemplate developing a set of internal standards. However, there are at least two strong reasons not to do so:

- There will be cost and delay incurred in developing and maintaining internal standards.
- There is a risk of the service becoming isolated from mainstream progress if the internal standards diverge from the mainstream.

8.3.3.12 There are already international expert bodies which are developing technical, pedagogical and process standards in consultation with users and industry. Most notable amongst these are:

- The Advanced Distributed Learning (ADL) initiative www.adlnet.org/. ADL is accelerating the development of e-learning specifications from leading contributors. It has developed a common framework in which the efforts of the other players fit. This
framework is Shareable Content Object Reference Model (SCORM). Version 1.2 of SCORM is available and developers are expected to adopt the specification in the development of materials.

- The US-based IMS Global Learning Consortium www.imsproject.org/index.html. One of the most prominent standards bodies, it has contributing members from academic, corporate, non-profit, and government organisations including DfES, The Joint Information Systems Committee (JISC) and the British Educational and Technology Agency (Becta) from the UK.

8.3.3.13 It is also true that e-learning standards like SCORM and IMS are not sufficiently advanced to provide a comprehensive basis to plan and deliver the kind of system required by the healthcare service. The reality, therefore, is that the healthcare service will initially have to operate in a world of evolving common standards and internal standards. It will also face the challenge of reconciling the multiple internal standards that currently exist within the organisation.

8.3.3.14 Standards development should not concentrate solely on e-learning materials in SCORM terms, but should also recognise the other public sector standards such as e-GIF (e-Government Interoperability Framework) and Accessibility guidelines. Many of the learning materials we have seen do not pass basic single A accessibility criteria set out by the W3C Web Accessibility Initiative http://www.w3.org/WAI/. Many learners will have difficulty accessing the learning materials if these standards are not adopted.

8.3.3.15 It also needs to be recognised that the healthcare service has its own major systems that are currently defining internal reporting standards that might impact upon e-learning activity. For example:

- The Electronic Staff Record (ESR) has been designed to provide a national system that fosters staff development, enables the administration of staff development activities, including training, and records achievement. As such, it has the potential to fulfil many of the roles of a Learning Management System in other organisations.

**Issues:**
The EQAG should consider how to govern interoperability in respect of e-learning and have sufficient authority to interact effectively with other national initiatives that impact on learning in the healthcare service. It also needs to be adequately resourced.

The continued development of e-learning materials needs to be set against agreed standards that promote effective and quality learning experiences.

Any group must work with other UK bodies that are already extensively involved in this field, notably DfES, The Joint Information Systems Committee (JISC) and British Educational Communication and Technology Agency (Becta). This is particularly important to avoid the healthcare service expending unnecessary effort duplicating activities that are being undertaken elsewhere.

It also needs to consider how to participate as a serious player in the main international standards bodies in order to ensure that healthcare services-specific requirements are addressed over time.

Finally, the group needs to plot a route for the healthcare services from the current position to a completely interoperable future, and communicate this route and the benefits of following it to all the relevant parties within the service.
8.3.4 e-learning Materials Approval Sub Group

8.3.4.1 There is a need to establish a group that will receive and approve/endorse e-learning materials for inclusion in a national healthcare service repository.

"Consideration needs to be given to a national advisory group on e-learning, with a role to kite mark materials that meet a standard."

8.3.4.2 It is recognised that sometimes such groups can become 'bogged down' in the process of approval and this must be guarded against. As standards mature, in any good quality assurance system there is a shift away from external bodies pronouncing on materials towards an approach whereby the submitter initially self assesses their material against agreed criteria before submission to a QA standards group.

8.3.4.3 It is acknowledged that there are currently no healthcare service-wide criteria for e-learning materials, so such a process would have to be incremental. In the first instance, it is likely that most materials would be admitted to the repository, as defined in Section 9 paragraph 9.2.2.1, possibly accompanied by a brief description of their status with respect to the approval guidelines. As standards emerge and become more widely adopted, the group could progressively move to a model in which materials were:

- Accepted into the repository (kite marked).
- Accepted subject to modifications.
- Not accepted until significant modifications had been made.

8.3.4.4 In order to keep costs to a minimum it is suggested that:

- Clear guidelines are produced for organisations submitting materials. These should be in line with the e-learning quality assurance framework.
- That a peer review (or author self-review) process is carried out before submission, and that this review is accompanied by a report documenting the piloting and evaluation of the submitted material.
- Once materials have been approved they should be subject to periodic re-approval. It is suggested that this should take place every 3 years.

**Mid Term Actions**

8.3.4 e-learning Materials Approval Sub Group

**Actions:**
The EQAG should address this issue within the next 6 months. The group should be charged with adopting and adapting e-learning standards to maximise the investment in e-learning content and the interoperability between systems. It should adopt as far as possible and only adapt where absolutely essential. It should also be required to participate in the key international standards bodies wherever possible.

The EQAG should consider how to govern interoperability in respect of e-learning, and have sufficient authority to interact with other national initiatives that impact on e-learning in the NHS. It should also be required to participate in the key international standards bodies wherever possible.
8.3.4.5 The benefits of the QA approach are that it:

- Provides greater clarity to purchasers and end users on the quality of the materials.
- Assists the establishment of an e-learning repository.
- Helps providers of materials to better meet the requirements of the healthcare service.

"We must all do it. Use critical (peer) reviewers of learning. Does it work as a learning resource? We need standards for this. We do not need central control, we need to know how to evaluate quality."

8.3.4.6 We have observed the process map that underpins the R-ITI content development (a 13 step process) and would commend this to the group as a guide to further development.

8.3.4.7 The content development strand of work should draw on:

- Technical e-learning expertise from the service.
- Learning design expertise from the service.
- Quality Assurance expertise from the service and education sector.

**Issue:**
The continued development of e-learning materials needs to be set against agreed standards that promote development and protect investment.

**Actions:**
The EQAG should develop and publish kite marking procedures, together with a Toolkit to assist learning developers within the service.

8.3.5 Educational and Design Standards - Learning Design

8.3.5.1 There is no single healthcare service model for learning design. Rather there is a wide range of examples of initiatives that offer different approaches, and a need for a number of models to match learning purposes and proposed outcomes. These are part of the concept of blended learning that is gaining recognition as a potentially powerful model of learning within the healthcare service. Variety would be encouraged if set in this context.

8.3.5.2 A number of interviewees voiced the concern that content and structure of materials could become dominated by technological rather than educational issues:

"...it is not the technologies that are the key issue. In my book the key thing is learning design"

"e-learning must not be treated differently to other learning - it needs to blend with other learning strategy/approaches".

8.3.5.3 Other organisations have adopted e-learning guidelines and consideration should be given to adopting and adapting these; for example the National Learning Network (NLN) guidelines which are based on Robert Gagné's instructional design model and which include reference to:
- Gaining attention (reception).
- Informing learners of the objective (expectancy).
- Stimulating recall of prior learning (retrieval).
- Presenting the stimulus (selective perception).
- Providing learning guidance (semantic encoding).
- Eliciting performance (responding).
- Providing feedback (reinforcement).
- Assessing performance (retrieval).
- Enhancing retention and transfer (generalisation).

See www.nln.ac.uk/materials for a more detailed explanation.

8.3.5.4 Within healthcare services, there will be particular design issues that will need to be included to address the requirements of work-based learning philosophy and practice.

8.3.5.5 We have seen some innovative approaches to these issues in the initiatives we have observed, as set out in Section 6.

8.3.5.6 The benefits of this approach are that it:

- Improves the overall quality and usability of e-learning materials.
- Assists designers in the production of high quality materials.
- Disseminates best practice, and reduces duplication of research and development spending on educational design activities across the healthcare service.

"Of particular importance are pedagogical guidelines, which ensure that content is developed with input from ... subject matter experts and instructional designers who understand the specific context of online learning. Standards, specifications and guidelines for usability and accessibility will ensure that as broad a range of users as possible, including those with disabilities, find the content efficient, effective and satisfying to use." SCIE Report

**Issue:**
The development of e-learning materials needs to be maintained within sound educational design principles.

**Actions:**
The EQAG should review existing learning approaches and guidelines for e-learning and make recommendations for the adoption of an agreed healthcare service set of guidelines.

8.3.6 e-learning Intellectual Property Rights (IPR)

8.3.6.1 The issue of intellectual property for e-learning materials has become a hot topic, particularly in Higher Education. This is particularly well documented in a report of the Higher Education Funding Council (Intellectual Property Rights in e-learning programmes; HEFC 2003).

8.3.6.2 We understand that, within the R-ITI initiative, an appropriate model has been constructed for handling IPR issues between Royal Colleges and the R-ITI that reflects the diverse nature and interests of stakeholders.
8.3.6.3 Within healthcare services, the treatment of intellectual property in e-learning currently seems to vary from contract to contract, although emerging early work from the NHS Institute Innovations Centre may provide some welcome leadership. One respondent mentioned that:

"Currently we have something of a free for all and there is very poor targeting of resources. Also we don't really look seriously at intellectual property - we give it away!"

8.3.6.4 Another suggested that historically we have only really been interested in IPR related to the UK or healthcare service markets:

"For a long time we never considered the potential earnings from other markets"

8.3.6.5 Recent developments in the global market for educational goods and services have raised the possibility of significant income generation through the sale of e-learning materials to 3rd parties. This has focused attention on the ownership of intellectual property which becomes a particularly important issue when contracting with non-healthcare service providers of goods and services.

8.3.6.6 It is therefore suggested that guidance be developed and issued to the healthcare service on this topic.

8.3.6.7 The benefits of this approach are that it:

- Prevents duplication of effort in the development of IPR guidance across healthcare service institutions.
- Protects the healthcare service's intellectual property rights.
- Offers the potential for income generation through sales to third parties.

8.3.6.8 This strand of work should draw on:

- Member(s) with commercial experience of e-learning.
- Member(s) with knowledge of IPR law.
- Member from the HEFC working group.

**Issue:**
The complexity of IPR issues require further exploration and consolidation to ensure uniformity across the healthcare service.

**Actions:**
The EQAG should review existing approaches to establishing Intellectual Property guidance for e-learning and make recommendations for the adoption of an agreed healthcare service set of guidelines.

8.3.7 Commissioning Standards - Guidance for e-learning Solutions

8.3.7.1 To date, there has not been a systematic overview of the commissioning of e-learning in
the UK. Nonetheless, anecdotal evidence suggests a very mixed picture with some materials being commissioned solely for local use and unusable by other organisations and others such as the NHS Core Programmes being commissioned for a wider market. The matter is further complicated by a lack of knowledge about who is doing what:

“This means we are often paying the same people to do the same thing over and over”.

8.3.7.2 A widespread call from respondents is for an approach to commissioning which is:

- Based on a clear business case - informed by evidence of need and of what currently exists or is in development.
- Designed to maximise impact in the workplace.
- Linked to major initiatives e.g. KSF and National Occupational Standards.
- Focused on seeking out best practice solutions.
- Able to offer portability of recognition for learning.
- Able to help the sector make optimum use of its purchasing power.
- Based on healthcare service standards and guidelines for e-learning, including those for intellectual property.

8.3.7.3 The benefits of this approach are that it would:

- Reduce the duplication of effort in designing what are often costly and complex specifications.
- Assist in ensuring the development of ‘joined up’ solutions linked to national priorities and initiatives.
- Facilitate the commissioning of materials within the standards framework, linked to further development of the repository.

8.3.7.4 This strand of work should engage with organisations involved in commissioning of e-learning from within and outside the healthcare service, and may include:

- Strategic Health Authorities.
- The Core Learning Programmes Unit.
- Skills for Health.
- Connecting for Health.
- R-ITI.
- IVIMEDS.

**Issue:**
The development of a cohesive approach to commissioning of e-learning needs to be set against the desire to ensure best value from commissioning processes, and to avoid duplication and repetition.

**Actions:**
The EQAG should review existing approaches to commissioning the development of e-learning materials and make recommendations for the adoption of an agreed healthcare service set of guidelines.
8.3.8 Summative Evaluation and Measurement of Impact

8.3.8.1 Interviewees overwhelmingly wished to see the development of e-learning initiatives that have a measurable impact on performance and productivity. There was also a desire to demonstrate that e-learning was an investment rather than a cost, and highlight its potential for delivering wider NHS targets and agendas. The types of evidence which could be used to assess impact were listed by many interviewees, and included:

- Evidence of upskilling, a more confident workforce, numbers of people upskilled.
- Recruitment and retention.
- Progression to other roles.
- Improvements in patient safety.
- Other benefits to patients - e.g. patient education and contribution to learning.
- Patient feedback.
- Compliance with mainline metrics and regulatory requirements.
- Productivity.
- Evidence of improvements/changes in practice.
- Money saved through quality improvements.
- Money saved through reducing 'opportunity cost' of training.
- Reduction in 'time to impact'; rapid embedding of new knowledge.
- Reduction in accidents.
- Reduction in complaints.
- Reduction in Clinical Negligence Scheme for Trusts (CNST) premiums.

8.3.8.2 A major difficulty in assessing the impact of training and development is the difficulty of isolating the specific effect of the development initiative from other issues, and respondents provided little evidence of a systematic approach to this issue.

8.3.8.3 We have identified two promising methodologies:

- The Return On Investment Institute (ROI) methodology.
- Kirkpatrick's four level evaluation model.

These are briefly described below.

8.3.8.4 Return On Investment Institute (ROI) methodology

- The Return On Investment Institute (http://www.roiinstitute.net/) is a US based organisation whose approach includes techniques to isolate the effects of a development initiative from other organisational issues. Its methodology is used for the measurement and evaluation of all kinds of performance improvement programmes and activities, including training and development, coaching, consulting, and project management. The methodology has been used successfully in corporate environments, public sector settings, and organisational contexts and is being used in the UK by the Skills for Business Network.

- The beauty of the ROI model is that it iteratively informs the development process. For example, it can be used at the design stage to maximise the ROI of e-learning materials. In addition, there is an emerging body of evidence related to its utility in the UK which could usefully be explored.
8.3.8.5 Kirkpatrick's four level evaluation model

- The four levels are as follows:
  - Level 1 Evaluation - Reactions. Evaluation at this level attempts to answer questions regarding the participants' perceptions - Did they like it? Was the material relevant to their work?
  - Level 2 Evaluation - Learning. Assessing at this level attempts to assess the extent students have advanced in skills, knowledge, or attitude.
  - Level 3 Evaluation - Transfer. Evaluating at this level attempts to answer the question - Are the newly acquired skills, knowledge, or attitude being used in the everyday environment of the learner?
  - Level 4 Evaluation- Results. This level measures the success of the program in terms of increased production, improved quality, decreased costs, reduced frequency of accidents, increased sales, and even higher profits or return on investment. From a business and organisational perspective, this is the overall reason for a training program, yet level four results are not typically addressed.

- According to Kirkpatrick's model, evaluation should always begin with level one, and then, as time and budget allows, should move sequentially through levels two, three, and four. Information from each prior level serves as a baseline for the next level's evaluation. Thus, each successive level represents a more precise measure of the effectiveness of the training programme, but at the same time requires a more rigorous and time-consuming analysis.

- However, we have not observed any meaningful implementation of this evaluation model within our study. Indeed, in our discussions with BP, level 4 was seen as a 'Holy Grail' that is rarely achieved.

- The EQAG should undertake work to review existing approaches to impact measurement and make recommendations for the adoption of an agreed healthcare service set of guidelines.

8.3.8.6 The benefits of this approach are that it:

- Can provide quantitative data metrics.
- Helps target resources to maximise benefits.
- Demonstrates benefits to funding providers.
- Further informs the design process and thereby improves programme effectiveness.

8.3.8.7 This strand of work should draw on:

- Educational designers from HE and FE.
- Professional bodies.
- Strategic Health/National Workforce Groups.
- Quality managers from the service and from education.
- Technical experts as required.

Issue:
Assessment of the impact of learning is a complex issue and in order to develop the longer term business case some agreed assessment principles will need to be established that are relevant to the healthcare service.

Actions:
The EQAG should review existing approaches to impact measurement and make recommendations for the adoption of an agreed healthcare service set of evaluation guidelines.
9.1 Introduction

9.1.1 In considering how the technology infrastructure should be configured we have drawn heavily on the existing initiatives already highlighted in section 6. Potential suppliers of learning management systems (and we use the term Virtual Learning Environment (VLE) throughout this section for simplicity) were not contacted during the study as it was agreed that until a consensus approach had been established it would be inappropriate to engage with any suppliers. To extend the consultation to all potential suppliers would also have extended the consultation period beyond the scope of this study. However, one of the outcomes of the study is a clear indication of the areas around which the healthcare service wish suppliers to engage with the service, and another is the need to present a level playing field for any potential or existing supplier.

9.1.2 There are a number of influential factors which affect the environment within which any technology infrastructure is developed. Many of these will be explored further in this section and again in the Investment Plan at Section 12. In relation to the technology infrastructure the most important of these influences are:

- The current investment in e-learning technology.
- Future trends in learning technology development.
- The potential, and ability, to make longer term investments in further strategic initiatives.

9.1.3 To explore these influences further we have developed a series of principles against which to develop our road map, investment strategy and overall approach. We believe that these principles represent a robust approach to working towards a longer-term strategy, whilst protecting the existing investment in the short and medium term. We have developed 10 principles that could be adopted by the healthcare service to guide investment over the next 3 years, by when, for example, a VLE may have reached the end of its useful life and an SHA may be considering investment options.

9.1.4 These principles are founded on a fairly 'centralist' approach, which might initially appear an unpopular approach. However, we believe this is necessary to drive the process forward, set high level direction, ensure some uniformity and get the principles established. We believe that once the programme is under way less centralisation may be necessary.

9.1.5 We set out this section in two parts. 9.2 below sets out the 10 principles and rationale for these, and 9.3 describes the requisite actions against the road map.

### The 10 technology principles

<table>
<thead>
<tr>
<th>Principle</th>
<th>Description</th>
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<tbody>
<tr>
<td>Principle 1</td>
<td>The future model should not incur usage licence charges more than once, irrespective of where the content is located or which VLE is used.</td>
</tr>
<tr>
<td>Principle 2</td>
<td>In order to protect the investment in content production, standards need to be adopted, adapted and deployed vigorously.</td>
</tr>
<tr>
<td>Principle 3</td>
<td>The successful implementation of this strategy is not a 'once only' design. The design must accommodate future (unknown) technologies for delivery and tracking of the content.</td>
</tr>
<tr>
<td>Principle 4</td>
<td>The healthcare service should not attempt to define the operating systems for VLEs as this could lock in future progression and upgrade routes.</td>
</tr>
<tr>
<td>Principle 5</td>
<td>Develop content once only.</td>
</tr>
</tbody>
</table>
9.2 Technology Principles

9.2.1 Current provision and sharing resources

9.2.1.1 Currently we see a fragmented approach whereby each organisation has its own VLE and its own content. This approach, whilst useful in the start-up development phase, is neither healthy nor cost effective for the longer term. Many of the initiatives that we have examined in Section 6 have moved the understanding of e-learning forward in many significant areas, such as content development, technical architecture and support systems. However, without exception, the interviewees agreed that the time was now right to collaborate and draw together the understanding of the ‘early adopters’.

9.2.1.2 Currently we can see a distributed model for e-learning similar to that shown in Figure 9.2 below (note in this diagram we use the term VLE not only to denote the repository of content, but also the learning management system, including the tracking of progression). Each VLE acts a repository for the e-learning materials it contains as well as the system for managing the learning. Currently, each system is self contained and has limited links to other systems. This will lead to duplication of e-learning content if this practice continues.

Figure 9.1 - the 10 technology principles

| Principle 6 | Weigh the cost of storage against the cost of telecoms to determine where the content should be held. |
| Principle 7 | Focus on what can be technically achieved NOW and wait for technology to catch up. |
| Principle 8 | The standards for transfer of learning objects between VLEs and the central repository, and transfer of learning records between VLEs must be included in the interoperability standards. |
| Principle 9 | Use DfES standards where they are 'good enough'. |
| Principle 10 | Work towards ubiquitous accessibility from an existing network and plan to build outward from this base. |

Figure 9.2 Existing service provision
9.2.1.3 For the purposes of this model, we are proposing that a user will have access to any material they may want to see, will see that material through a single screen and will have a record of learning recorded against their name. In order to do this, each system will need interfaces to the systems to allow the content to be accessed. See Figure 9.3 below.

![Figure 9.3 Existing service provision](image)

9.2.1.4 For modelling purposes, we assume that the initial cost of setting up the infrastructure is in the order of £200,000 and the running costs are £25,000 per annum. This represents an investment of £275,000 over 3 years, ignoring the cost of content production or maintenance.

9.2.1.5 On the basis that each VLE works on a 'per licence' model of some sort, and we know that there are many variants of this, we could see an annual usage charge of £100,000 per VLE to support around 4,000 concurrent users.

9.2.1.6 In the current configuration, users would need to log on to the specific VLE to access the content that was contained in that discrete VLE. If content was made available to other VLEs there would be a licence implication, which might (if the VLE were the same) be negligible or nothing (as with NEYNL, CLPU, and the North West Workforce Development Confederations).

9.2.1.7 However, if the content is in another VLE then some licence fee for concurrent users in the host VLE will be incurred. In the short term, this process of 'passporting' may solve the single login issue, but would mean that licence charges are increased each time content is drawn from an additional VLE. So although in the model above a cost of 4 x £100,000 is unlikely, a total usage licence cost of say, £250,000 could be envisaged.

9.2.1.8 Without complicating the model, with further assumptions we could foresee 20 VLEs hosting content and incurring licence charges of around £1.25M per annum.

9.2.1.9 This leads us to the first principle of our model:

**Principle 1** The future model should not incur usage licence charges more than once, irrespective of where the content is located or which VLE is used.
9.2.2 Content Development

Figure 9.4: Establishing a repository for the health care service
9.2.2.1 Centralised Repository Model

- A repository can be defined as a central location for the storage and management of e-learning materials.

9.2.2.2 In Figure 9.4 above, we are not proposing that there is ‘one’ repository in the short to medium term, although this may be a decision to be taken in the next 3-5 years as technology advances and investment decisions are revisited. In the short to medium term, we envisage a collection of repositories that may at some stage be ‘federated’ to allow content to move between repositories easily.

9.2.2.3 Moving all of the content into this central repository model does two things:

- Removes the ‘double usage’ licensing issue outlined in 9.2.1 above.
- Protects the value of the investment in content production.

9.2.2.4 We propose an NHS Gold Band to protect existing and future investment against as yet unknown technology and investment developments. The protection of the NHS Gold Band is based upon the proposition that by developing standards-based materials that are independent of VLEs, any content is future proofed and can be used in any future learning environment provided that the chosen environment can support the learning and delivery standards agreed by the healthcare service.

9.2.2.5 The Gold Band standards are the key ‘protection’ that must be developed not only to protect existing investment but also to provide a standard against which future content can be developed, either by commercial suppliers or by in-house teams.

9.2.2.6 In proposing this approach, we are aware that network performance and bandwidth capacity may be a key constraint to rapid growth. At this point, we log the fact that although a central repository might work in the early stage of the development, network performance will be a key restraint if the central repository concept grows to embrace all content. We could see a scenario where years one and two were based upon existing networks, whereas year 3 might need to rely on enhanced network performance, for example Connecting for Health or SuperJanet.

9.2.2.7 We summarise the Gold Band concept in the following principles:

**Principle 2** In order to protect the investment in content production, standards need to be adopted, adapted and deployed vigorously.

**Principle 3** The successful implementation of this strategy is not a ‘once only’ design. The design must accommodate future (unknown) technologies for delivery and tracking of the content.

9.2.2.8 To illustrate Principle 3 further, we would expect that as each VLE matures, upgrades and enhancements will be added by the suppliers and additional charges might be incurred. Whilst some SHAs might resist the upgrade pressure, there may come a time when this is inevitable. We would liken this to upgrading operating systems such as the Windows operating system. At some point, an upgrade will be mandatory, as the supplier will no longer support the old system. The strategy should embrace this principle to future-proof content.
9.2.3 Interoperability

Following on from Principle 3, we see the role of interoperability standards as reinforcing principle 4.

Principle 4 The healthcare service should not attempt to define the operating systems for VLEs as this could lock in future progression and upgrade routes.

9.2.4 Content Usage

Looking forward beyond the short term, we explore how the content in the central repository is utilised in the individual VLEs.

We understand the principles of ‘one place for everything’ that has been emphasised throughout our research. In the short term, we believe that this will be a mixed market economy. Where licensing allows, content will be shared across VLEs in real time. In some cases, the content must be moved into an individual VLE so that it forms part of the tracking process. Once usage increases, these dynamics will change. At this stage, we cannot predict what these might change to, but this uncertainty should not stop the establishment of the following principles.

Principle 5 Develop content once only.

Principle 6 Weigh the cost of storage against the cost of telecoms to determine where the content should be held.

Principle 7 Focus on what can be technically achieved NOW and wait for technology to catch up.
9.2.5 Tracking and Transfer

In the short to medium term, with a distributed or centralised repository, the premise is that there is no centralised tracking of learners' progress. This will need to happen within the individual VLEs. There will therefore need to be a standard attached to the learning object that will enable the learner's progress to be tracked by each VLE. The transferability of the learner's progress may ultimately be achieved through the ESR or e-KSF, but, until those systems are developed, some form of transferable record must be output from the repository that is to an agreed standard and can be imported by any 'standards compliant' VLE.

**Figure 9.5 - Trackability and transferability**
Principle 8 The standards for transfer of learning objects between VLEs and the central repository, and transfer of learning records between VLEs must be included in the interoperability standards.

9.2.6 Standards

9.2.6.1 In March 2005 The DfES published its strategy for e-learning ‘Harnessing Technology - Transforming Learning and Children’s Services’ [http://www.dfes.gov.uk/publications/e-strategy/]. A number of standards have emerged from that strategy, and these have informed our recommendations.

9.2.6.2 Most recently the British Educational Communication and Technology Agency (Becta) has issued a European Journal Contract Note (OJEU notice) for a Learning Service Framework Agreement, which sets out the conditions against which suppliers’ offerings will be judged for the purposes of being included in a select list of tenderers.

9.2.6.3 Most of these standards and conditions will act as a good starting point for developing more appropriate standards for the health sector, and these should inform principle 9.

Principle 9 Use DfES standards where they are ‘good enough’.
9.2.7 Access
9.2.7.1 We are aware of the arguments that access needs to be ubiquitous and device independent, but in order to maximise access in the short term, it appears that learning will need to occur using devices linked to each VLE if this learning is to be tracked automatically. Connecting for Health might provide that connectivity. As this is likely to be the only route by which SHAs will obtain large scale connectivity, it would seem logical to use this network to access the VLE and e-learning solutions initially. This supports the final principle.

**Principle 10**  Work towards ubiquitous accessibility from an existing network and plan to build outward from this base.

9.2.8 The Long Term View

9.2.8.1 Based upon the principles outlined throughout this section, we have set out a road map that, if followed, could provide short and medium term benefits. However, fundamental to our approach is the need to ensure that any progression is made without eliminating the potential for a longer-term change in strategic direction.

9.2.8.2 We are aware that significant economies of scale could be made if the functions of the VLEs and the repository were all carried out within the same system, and we explore these further in Section 12, but we are aware that the one size fits all approach will not find favour at present.

9.2.8.3 We contend that once the full business case has been explored, and various national initiatives such as ESR, Connecting for Health and e-KSF have been implemented and evaluated, the investment imperatives and opportunities may be different. For example, local VLEs may only be a transitory phase that will disappear in 3 years. This may give the opportunity to revisit the centralist approach again, but would not preclude retention of the distributed model.

"Learning Platforms have almost had their day"
"VLEs are a great example of thinking the problem is solved when in fact it isn't."
"Why do we think we can control web based technology in the healthcare service?"

9.2.8.4 In our research, a number of views were expressed that support this approach.

Short Term Actions

9.3 Developing the Technology Infrastructure

9.3.1 Audit of Existing Initiatives

9.3.1.1 We are aware that the Education, Training and Development Branch of DH has recently (22nd March 2006) initiated a simple audit of e-learning initiatives funded by the Department of Health. The findings of this audit need to be captured, extended and shared. Although it will not be necessary to identify each and every initiative to develop the strategic approach, we would recommend that the results are shared with a wide audience and kept up to date.

9.3.1.2 Throughout the study, we have been able to ‘join up’ initiatives from within and outside the healthcare service and this has already resulted in several collaborative approaches. We would suggest that consideration is given to continuing this information sharing process in the most appropriate way.
9.3.1.3 We have also collected a huge quantity of data that should be shared beyond the contents of this report.

### Issue:
Having identified the extent of e-learning activities within the healthcare service, the continued dissemination and updating of this information should be given a high priority, to avoid loss of currency and the associated costs of having to collect the data again at a later date.

### Actions:
The National Governance and Strategy Board will need to establish a clear communication plan to ensure information is disseminated and kept up to date. We suggest that this should be web based. In the short term it should be hosted by one of the existing initiatives.

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**9.3.2 VLE Framework Agreement**

9.3.2.1 As outlined in 9.3.1.1 above, Becta is now preparing to engage suppliers in a Framework Agreement for the provision of learning environments for schools, colleges and adult learning establishment. Alongside this, they have developed standards and a code of conduct for suppliers. Details about this important development can be found by visiting the following web links:


9.3.2.2 These provide a robust starting point for the healthcare service. Becta should be engaged at the earliest opportunity to identify the suitability of the Becta standards, and any potential business relationship.

9.3.2.3 For the individual organisations within the healthcare service, cost effective procurement has been difficult to address consistently. Procurement processes have resulted in a vast number of suppliers putting forward their offerings, resulting in a long and expensive procurement process.

9.3.2.4 Implementing a framework agreement enables each organisation to select a supplier from a 'catalogue' without the associated procurement costs. The imperative of effective and efficient procurement processes has been identified as a key action by the Gershon Review, which is explored further in Section 12.

9.3.2.5 Good practice guidance offered by NEYNL in ‘A Strategic Approach to developing e-learning capability for Healthcare’ and the ‘Selecting and Implementing a Virtual Learning Environment Toolkit’ by Cumbria and Lancashire SHA offer additional support to inform the selection process.

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### Issue:
The healthcare service needs to adopt and possibly adapt a framework agreement so that any future procurement can be made against agreed standards and without the unnecessary overhead of an open tendering process. Consideration should also be given to engaging Becta as the agent for healthcare services for this area of work.

### Actions:
Becta should be engaged in the short term to identify how suitable the Framework Agreement they are currently constructing is for healthcare.
9.3.3 Specification for Repository

9.3.3.1 We identify the need for an e-learning repository specification to ensure that the healthcare service is fully able to benefit from access to learning resources, including content, guidance and toolkit resources.

9.3.3.2 The functionality of the repository is set out in detail at 9.2 above. Establishing a 'one click' solution will require the completion of a clear specification, against which a worked business case can be established. At present, it is not possible to accurately estimate the likely cost of such an approach, as there is as yet no agreement of what functions the repository should include.

9.3.3.3 The initiatives that have so far emerged offer a number of options for consideration. We have repeatedly been told that the interface needs to be simple, everything 2 clicks away, otherwise people will not use it.

"It is important that materials can be made available on an organisation's own VLE - need management reporting; learner progress; personal support; (it) needs to be simple for the user i.e. only need to access one system."

9.3.3.4 We do not underestimate the complexity of preparing such a specification, and therefore recommend that work starts on this in the short term and is progressed over a period of time. Without a specification, it will be difficult to prepare an accurate return on investment (ROI) model and fully worked business case. Some assumptions will have to be built into the specification and these should be reviewed on a regular basis.

**Issue:**
Without a specification for the repository, progression to a comprehensive business case will be delayed further.

**Actions:**
A short-term action in the work programme should be to establish a baseline specification that can feed into the ROI and business case model.
9.3.4 Interface Standards to the Electronic Staff Record

9.3.4.1 Whatever VLE or repository is chosen, the demand for an interface with the Electronic Staff Record is clear. Although the requirement for this is identified in 9.2.5 above, there should be an early agreement on the information that should be contained in this interface standard.

9.3.4.2 We are aware of a recent workshop which has considered the issues that need to be considered if an effective interface and integration between ESR, e-KSF and VLE developments is to be secured. Of particular importance is the need for common messages to be shared with the service about how such integration should be progressed.

9.3.4.3 NEYNL are currently implementing an interface between their MLE and ESR and the e-KSF using Web Services and the outcomes of this initiative will inform further development of the interface standards for ESR. In figure 9.7 below (taken from a recent presentation by NEYNL) the various components of such an implementation are defined. Both the MLE and the e-KSF have their own databases (DB) and interact through a technology known as Web Services (WS).

![Figure 9.7 Schematic diagram of NEYNL interface](image)

**Issue:**
The early establishment of a standard interface specification will stop the proliferation of different approaches to linking ESR and VLEs.

**Actions:**
The results of the NEYNL project to interface their MLE and e-KSF should be reviewed and interface standards be developed based upon these results.
9.3.5 Learning Centres

9.3.5.1 A number of interviewees made the case for more distributed learning environments. Whilst we propose using existing infrastructure in 9.2.7 above, we would make the case for a more flexible approach in the medium to long term. For many staff, 'on the job' access to learning may not be a realistic option.

"Access to e-learning during work hours is also an issue not in terms of the technology, although this can present problems, but the fact that in a 12 hour shift there is insufficient time to do any e-learning of real value and most people would have to learn at home if they were to put any time to it at all."

9.3.5.2 Some Trusts and SHAs have provided facilities for staff to access learning and e-learning materials, but this is by no means the norm. It has also been difficult for some Trusts to engage with Learndirect in an effective manner.

9.3.5.3 Looking to the longer term, it is clear that learning styles will play a huge part in deciding the most appropriate delivery mechanism, be it PDAs, iPods or Digital TV. Preparing for this diversity is all part of the standards development explored in detail elsewhere in this report.

9.3.5.4 In the medium term however, consideration must be given to the significant proportion of the workforce which does not have access to this type of technology either in the workplace or at home. Leaving aside for one moment the time available to undertaking the learning, access to technology could be the single greatest barrier to successful implementation of the strategy.

9.3.5.5 Once the issue of access is overcome, the human issues of time, motivation and skills will become more prominent, but until ubiquitous access is available it will always be a barrier to progression.

9.3.5.6 As the workforce moves towards a more distributed model, with up to 85% working in community locations, we would look to community partnerships to assist with access. There are already a significant number of community ICT centres across the UK, and in 2002/03 alone, over 3,000 UK online centres were established with DfES funding. Arguably, many of these centres are in locations that staff would find more accessible than their primary workplace.

9.3.5.7 Although the responsibility for strategic policy for these centres rests with University for Industry (UfI), most of the centres are run by local organisations, including the Voluntary and Community Sector and Local Authorities. Many of these centres provide a more relevant location for learning.

9.3.5.8 There is scope for local Trusts to work in partnership with these and other centres, to develop coordinated approaches to learning, and also achieve other learning objectives. Local Learning and Skills Councils (LSC) have agendas to Widen Adult Participation in learning, and in some cases these funds can be used in collaboration with local learning centres to assist delivery of the Skills for Life agenda.
9.3.5.9 We believe that there is further scope to develop this collaborative approach within this and similar frameworks such as Local Area Agreements (LAA) with Local Strategic Partnerships (LSP), whilst also considering other approaches to providing access within the workplace.

**Issue:**
Imaginative approaches should be examined and developed alongside existing thinking to provide access to learning opportunities in a diverse range of locations.

**Actions:**
Further research should be carried out to identify those successful LSPs and other initiatives that have included learning centres located in communities. Further work should be carried out to identify what scope additional funds such as the Widening Adult Participation Action Fund (WAPAF) has for funding healthcare learning.

**Long Term Actions**

9.3.6 Functional Repository

9.3.6.1 Notwithstanding the rate of technology change, the longer-term aim should be for a centralised repository to hold all of the learning objects, materials, tools and features that a learner wants in one place. The overall aim of this repository is to collect all the items relevant to learning in healthcare into one easily accessed location and thus satisfy the 'two click' requirement. At the same time, the repository must allow different users to view and manage their learning environment in the way they choose. It must also be able to provide the same information in different 'skins' and identities.

9.3.6.2 Looking to the future, it is difficult to predict with any certainty whether this would be one physical repository or a distributed model. The case for developing standards that can meet any development in technology has been made in preceding sections.

9.3.6.3 Against the backdrop of these 'shifting sands', we suggest that there are a number of key components for inclusion within the functional repository. These are now identified:

9.3.7 Kite Marked Materials

9.3.7.1 One of the main functions of the repository will be to catalogue (and possibly hold) all learning materials that have been approved by the Quality Assurance mechanism. The process for approval is discussed in 8.3.4. Establishing this central register of quality assured materials will eliminate duplication and stimulate development. It is not envisaged that there would be only one solution to each subject, but rather a small number of quality assured products that address a different range of needs.

9.3.7.2 In some cases, materials will be available free of charge (e.g. The Core Learning Programme Materials), in others there may be a charge. The key purpose of the register of kite marked materials is to promote development of high quality materials.

9.3.7.3 Establishing these standards and cataloguing those materials that meet these standards will go a long way to promoting collaboration, avoiding duplication and stimulating 'commercial' interest in continually developing high quality materials for the service.
9.3.8 ‘Amnesty Box’

9.3.8.1 We propose that there should be an amnesty period during which all materials in current use should be evaluated. Given that the development of existing materials has been carried out with no existing agreement on standards, it would be inappropriate to rule out any of the investment to date on the basis that it does not meet the (later) agreed standard.

9.3.8.2 We therefore propose that the principle of ‘good enough’ is adopted at this early stage and that an amnesty period of up to 2 years be considered. This takes into account the length of time necessary to develop new materials, and the fact that completing the ‘definitive’ library of e-learning materials is likely to be a 5 year programme - if it can ever be deemed complete. The investment of the past years will be protected by this pragmatic approach.

9.3.9 Calls for Developing Materials

9.3.9.1 We envisage that there will be a need to share information about forthcoming materials’ development. This area may need to be controlled to avoid leakage of emerging IPR, but should act as a mechanism for sharing ideas for development. Interviewees noted that materials may need to be adapted more specifically for staff groups or local deployment and thus there needs to be collaboration between developers to support this. This collaborative approach between 'authors' is seen as a key success of some initiatives.

“We worked with a group of students who collaborated to write a book online, each writing a chapter. They developed the ability to work as a team and consider and evaluate not only their own work and style but that of colleagues."

9.3.9.2 This area of the repository may also be used to publish requests for materials to be developed and could be accessible to HEIs, commercial suppliers or any of the 'internal market' organisations that can produce quality assured materials.

9.3.10 Peer Review

9.3.10.1 Whilst the kite marking of quality assured materials is central to the ongoing development of the repository, a great deal of feedback on materials will come from peer review. It is vital that subject experts take part in the formal design and review of materials. The healthcare service has extensive experience with this type of review process. The repository should also accommodate peer review in a way that can support and complement the formal QA process.

"Nationally we must not dictate an approach - all content should be permitted but accepted by peer review/meeting standards."

9.3.10.2 This type of peer review could lend itself to the formal QA process, and support and validate its workings. It may also be used in a less formal environment to develop ideas and materials that might later be approved through the formal QA process.
9.3.11 Collaborative Tools

9.3.11.1 Many of the existing initiatives include collaborative tools such as message boards. The growing use of collaborative tools such as Wikis, Blogs and podcasting need to be incorporated into any design.

A Weblog (often web log, also known as a Blog) is a website which contains periodic, reverse chronologically ordered posts on a common webpage. Individual posts (which taken together are the weblog) either share a particular theme, or a single or small group of authors.

A Wiki is a web application that allows users to add content, as on an Internet forum, but also allows anyone to edit the content. It is very similar to a Blog, but anybody can add or edit any of the content. An example of Wiki can be found at: http://en.wikipedia.org/wiki/Main_Page

podcasting is a method of publishing files via the Internet, allowing users to subscribe to a feed and receive new files automatically. The word ‘podcasting’ combines ‘broadcasting’ with the name of Apple Computers' iPod audio player (although podcasting was not invented by Apple, nor do podcasts require a portable player or Apple software). It became popular in late 2004, intended largely for downloading audio files onto a portable audio player. However, listening to podcasts does not require a portable device and it is not traditional ‘broadcasting’ to a mass audience at a fixed time. More information at: http://en.wikipedia.org/wiki/Podcast

Definitions courtesy of www.aclearn.net

9.3.11.2 These collaborative tools are gaining credibility in learning as their use changes the whole learning design model.

"(we have) useful functionality that starts from idea of on-line collaboration - Wikis - on-line collaborative documents. I write, you can add, change etc. Huge social skills have developed around this. Skills, not content dependent learning. Comes from what I have worked out for myself."

9.3.11.3 The range of collaborative tools will no doubt expand over the coming years and although some could be easily dismissed as ‘the latest fad’ many are presenting alternative learning models and offer a real benefit to learners.

9.3.11.4 Many of these tools form part of the Aclearn.net run by National Institute of Adult Continuing Education (NIACE) and Becta on behalf of DfES. www.aclearn.net addresses the needs of Adult and Community Learning Practitioners (ACL) across the UK and provides some useful references for embedding e-learning in organisations not dissimilar to healthcare.

9.3.12 Links to e-libraries

9.3.12.1 The National Library for Health (NeLH) www.nelh.nhs.uk aims to be the best health library and information service in the world. It provides a single point of search across a number of databases, as well as links to categorised information.
9.3.12.2 The approach taken for NeLH should be encompassed in the repository so that, as far as possible, the user of the repository has one interface to work with.

9.3.12.3 The indexing system within the NeLH also provides useful guidance on cataloguing learning materials and the associated issues that need to be addressed to ensure easily searchable content, although there is still much work to be done.

9.3.13 IPR registry

9.3.13.1 At this stage we have not addressed the issue of registering IPR ownership within the repository. As yet there is no agreement on IPR ownership, as many interviewees felt that access should be for all, and others wished to protect any investment made in this area.

9.3.13.2 Until a clearer understanding emerges, based upon some of the shared experiences of project such as R-ITI and IVIMEDS, we are unable to make recommendations about where the IPR rights should be logged. In technical terms, once agreement has been reached, it would be a relatively simple task to include this in the central repository. Equally if content is to remain in federated repositories, then consideration would need to be given to alternatives.

9.3.14 Summary

9.3.14.1 Many of the requirements for a repository are already understood, but a ‘horizon scanning’ activity needs to begin, to ensure that new and emerging features are incorporated into current thinking. We explore this further in 10.4

"...the sector needs access to experts who are scanning the educational design and technology horizons to identify and anticipate new developments."

9.3.14.2 Organisations such as the Joint Information Systems Committee (JISC) already carry out this type of activity on behalf of some of the education sector, and the healthcare service should explore whether JISC’s type of approach is appropriate for its own requirements.

**Issue:**
Any specification for the repository needs to take account of existing and emerging techniques, tools and processes that underpin the learning experience. Keeping up to date with these issues and refining the specification should be an ongoing process of some importance.

**Actions:**
Establish a suitable review process that incorporates a horizon scanning component. Existing providers of this service should be considered before establishing a healthcare specific service.
10 Content Acquisition - Learning Design and Development

10.1 We have covered many aspects of learning design and development in the preceding sections. However, there are some very specific short term actions that have suggested themselves to us during the study.

Short Term Actions

10.2 Collaborative Group of Early Adopters

10.2.1 Throughout the study, we were impressed by the willingness of all interviewees to share their experiences and knowledge. Whilst we recognise that in some ways this is a characteristic of the healthcare service, we identified that in order to stimulate the sharing of best practice and ideas amongst the early adopters, some mechanism is required to facilitate this.

"drawing skills and expertise out of our experts" "mutual respect for each other, bottom up"

"we need to encourage best practice groups to collaborate. There is a relatively small group that needs to collaborate. We need to bring together the thought leaders in some form of collaborative process that needs funding ...”

10.2.2 We have observed the Office of the Deputy Prime Minister (ODPM) National Projects initiative that set out to build upon excellence in local government in key areas. http://www.localegovnp.org/

10.2.3 By establishing funded projects around which collaboration could be built, the sometimes diverse organisations that make up local government were brought together to share their knowledge and expertise for the ‘better good’ of the service. In some cases the process has established national standards, for example the Framework for Information Sharing in a Multi-Agency Environment (FAME).

In many ways, the composition of this group should reflect the make up of the National Strategy and Governance Board.

Issue:
There is an immediate need to bring together the leaders and early adopters from the healthcare service to cement the desire to collaborate and share best practice. It is suggested that collaboration will only work effectively if a specific project is defined that allows all parties to work collaboratively.

Actions:
A project needs to be established in which all early adopters and leaders can engage. The project needs to be defined, costed and funded to ensure effective collaboration.
10.3 Agreement of Mandatory and Core Materials

10.3.1 Almost all interviewees recognise the fact that there are real economies of scale to be obtained from the development of 'core' learning materials that are in widespread demand across the healthcare service. Some of these materials are already in existence and include the following Core Learning Programmes Unit (CLPU) e-learning programmes:

- Working for the NHS.
- Introduction to today's NHS.
- Fire Safety.
- Health and Safety.
- Manual Handling.
- Infection Control.

10.3.2 All mandatory or core materials should be directly related to the core components of KSF:

- Communication.
- Personal and people development.
- Health safety and security.
- Service improvement.
- Quality.
- Equality and diversity.

10.3.3 The core components of the KSF are directly related to the core components of the Health and Social Care National Vocational Qualification Frameworks. The latter also form the core components of the emerging Foundation Degree Framework for the health sector and thus have a significant market.

10.3.4 Agreeing these core components and nationally kite marking them could result in the end to a situation, expressed by many respondents, where, because of a lack of standardisation:

"we see a lot of unnecessary repetition of statutory and mandatory training when people move jobs", and

"there's a lot of unnecessary duplication of effort with people reinventing the wheel all over the place."

Issue:
Without a clear agreement of the 'core curriculum', further development of e-learning materials may lead to duplication or replication.

Actions:
It is recommended that the Core Learning Programmes Unit, Skills for Health and SHA e-learning leads convene to agree a map of priorities in terms of materials development.
10.4 Scanning the Horizon

10.4.1 We introduced this subject earlier in the report. Technologies have been evolving over the last two or three decades and have gone through many phases and approaches, and there is the impression that many organisations are running just to keep up. Little regard has been paid to ensuring that developments can survive the rapid changes in technology.

10.4.2 Within the healthcare service there are few organisations, apart from perhaps Connecting for Health, which have the capacity to scan the future horizons in e-learning, and even fewer have awareness of what the future holds.

10.4.3 This means that the sector may not be fully capitalising on existing technologies. For example, a number of recent reports have highlighted the potential for mobile devices to be used successfully to engage non-traditional participants in learning.

10.4.4 Perhaps more significantly we may, in attempting to ‘catch up’ with technology, be investing in solutions that may be dated. For example one external expert questioned the preoccupation of the healthcare service with VLEs, as noted earlier.

10.4.5 In light of the above, it is suggested that a key role in implementing an e-learning road map will be a technology scanning function.

10.4.6 We restate here for completeness the issues and actions in relation to the future of the repository specification originally set out in 9.3.14.2 above

| Issue: | Any specification for the repository needs to take account of existing and emerging techniques, tools and processes that underpin the learning experience. Keeping up to date with these issues and refining the specification should be an ongoing process of some importance. |
| Actions: | Establish a suitable review process that incorporates a horizon scanning component. Existing providers of this service should be considered before establishing a healthcare specific service. |
11 Preparing the Service

Short Term Actions

11.1. Engagement Strategy

11.1.1 Engaging the workforce in the development and implementation of an organisational e-learning strategy is central to ensuring the success of the strategy and its longer-term sustainability. Organisations need to be clear about the nature and scale of the culture change they are seeking to achieve, and how they propose to manage the change.

11.1.2 The key elements of an engagement strategy are:

- Awareness raising across the organisation.
- A clear underpinning concept of change management.
- Use of an organisational e-maturity toolkit to establish a baseline for developing e-capability and measure progress against plans.
- Identification and adoption of best practice models that best fit the organisation, and which can be adapted for its use.
- Demonstrating the benefits of e-learning to potential users.
- Engagement of the workforce at all levels in identifying and planning how the strategy will be introduced, including identifying potential barriers to its implementation and the solutions to address them.
- A workforce skills needs’ analysis and training plan.
- A costed implementation plan, based on the above, setting out clear objectives, targets, outcomes and measures, which specify the responsibilities and accountabilities of those who need to be involved. This must be set within a realistic timescale and matched by resources (intellectual, financial and time).
- High quality project management.
- Good, honest communication - to have confidence in the process, participants will need to be regularly informed and updated about progress and actively involved in monitoring, evaluating and reviewing the plan’s progress.
- Support to trainers and educationalists.
- Easy access to information, advice and support on e-learning, including access to hot-desk support, preferably 24/7.
- Use of e-guides and champions recruited from across the workforce, who offer peer learning and support. Best practice suggests that there need to be high level champions e.g. Chief Executive, Director of HRD, located within the organisation’s learning and development function and champions who work with front-line personnel.
- Opportunities to try out e-learning through use of road shows, cybercafés. Games can be a good way of capturing people’s interest.
- Learning opportunities that are designed to engage, motivate and to be enjoyable e.g. use of e-mail to send photographs to a family member.
- Use of IT to practice familiar work-tasks.
- Accreditation where desired, records of achievement, celebration of learning success.
- Internal competition between teams and sections to accelerate upskilling and learning take-up.
- Use of incentives and rewards.
11.1.3 Our research shows that there is widespread and realistic awareness of the challenges involved in developing a service-wide, organisational culture of e-learning. Good examples of change models exist, notably in the NW and NEYNL, that have been developed to tackle these challenges. Interviewees emphasised the importance of having a strategy to engage the workforce in e-learning and, in the case of the professional bodies, of working collaboratively with the Postgraduate Deaneries. The Royal College of Surgeons has employed a range of strategies to consult and engage stakeholders in their plans to develop and roll-out their new on-line curriculum. This was followed by capacity building with Deanery faculties, who could then take forward the on-going implementation and support on the ground.

11.1.4 SHA-led strategies which engaged Trusts from the outset in the thinking and planning of e-learning across the area, achieved the confidence of partners and were able to realise economies of scale though joint commissioning, purchasing and implementation strategies. Access to a common platform and learning resources help raise the standards across the health community, as well as creating common service cultures within the workforce. Interviewees emphasised the necessity of securing high quality change and project management support and not just relying on 'who was available at the time to do the job'.

11.1.5 Age-related skills gaps were frequently mentioned. Older colleagues, including those in key decision-making roles, can be anxious about ICT and also resistant to developing new learning skills and techniques. The same can be true of educators. This can act as a barrier to e-learning participation by new recruits coming to the service from schools, colleges and HEIs - what one respondent referred to as "the screenager generation". These recruits enter employment with extensive ICT experience and therefore expectation of using e-learning, but where key decision makers and resource holders are not convinced about the value of e-learning, demand-led approaches to change, emerging through most 'junior members' of the organisation, are likely to remain unheard.

11.1.6 This is beginning to change. Clinical staff in many Trusts are using a range of mobile devices and senior medical staff are recognising that technology can enable access to timely, high quality data. Creating opportunities to demonstrate how technology can help manage cases, provide access to research and data were identified among a number of such examples which could be used to help users see the benefits and to encourage change.

11.1.7 Our research showed a preference for analysing skills needs by using ‘skills asset’ rather than ‘skills deficit’ approaches. While acknowledging the digital divide and the already unequal access to PCs which is likely to exist between the better and poorer paid members of the workforce, interviewees pointed out that focusing on people's existing use of and familiarity with technology e.g. mobiles, PDAs, can provide a sound foundation for wider skills development and application. Technicians and those in craft occupations might well adapt better to learning technologies than their less technology confident peers. Once familiarity with e-learning functions is acquired, second and subsequent experiences of e-learning are likely to be easier.

11.1.8 Numerous references were made to the need to engage the educator workforce in e-learning. Interviewees identified the critical importance of engaging existing organisational IT services in plans to introduce e-learning. Failure to do so can result in barriers to change. Learning providers with experience of working across healthcare service organisations reported wide divergences in organisational culture and behaviour, with decisions sometimes being taken within IT departments without reference to wider organisational objectives.
11.1.9 An appropriate choice and use of skills development processes is important. The rigidity of the European Computer Driving Licence (ECDL) was criticised. Preference was expressed for use of an IT skills menu, such as the ITQ http://www.e-skills.com/Qualifications-&-Training/1078 developed by the ICT Sector Skills Council, e-skills UK, from which employees can select the skills that they want to develop, for the purposes for which they need them and at the time that suits them.

11.1.10 Reference was made to the appointment of organisational e-learning champions and enthusiasts to model, coach, support and generally 'work alongside their peers'. The e-learning Guides model developed by NIACE to roll out e-learning to the Adult and Community Learning Sector could work well for the healthcare service. E-guides receive training and then cascade their learning to up to 50 colleagues. The ACL workforce is predominantly female, part-time and distributed across the community. The model would work well with peripatetic health professionals and with staff who are likely to be community based in the future.

11.1.11 Interviewees were keen to ensure that maximum use was made of wider community resources, especially those offered by other education providers and public libraries. Full use of NHS Library resources was advocated, building on work done over the last few years opening up Trust resources to the wider workforce and the community.

11.1.12 Rather than purchasing new equipment, use of learning facilities in UK On-line and Learndirect centres was strongly recommended, including free Skills Checks for those without Basic Skills. Interviewees recommended building such arrangements into learning commissions and contractual arrangements. Some identified opportunities to use the development of new health communities as a catalyst for developing new federated learning communities.

Issue:
In order to achieve the organisational culture change required to introduce, embed and sustain e-learning, organisations will need to develop an organisation-wide engagement strategy.

Actions:
The National Governance and Standards Board should commission a clear communication strategy.

11.2 Emerging Learning Tools and Support

11.2.1 There is an emerging interest in using web services such as podcasting, Wikis and Blogs, which give educators and students freedoms from the already structured functionalities of learning platforms. Frustration with VLEs is likely to be increased where low cost, low functionality solutions have been adopted that constrain users' freedoms to learn in the ways that suit them best or that constrain the potential and quality of the learning experience.

11.2.2 JISC has recently launched an e-learning framework based on web services. Such an approach offers users the potential to tailor everything from enrolment to assessment. Educators are able to specify what they want - chat, assessment etc - via a portal, and basic personal learning environments are available for learners. The idea is simple but powerful. Learners are given a personal space online to pose questions, publish work in progress, develop collaborative texts (Wikis), maintain a reflective log/diary (Blog), link to and comment on relevant resources and link up with other learners with similar interests to create ad-hoc learning communities. The real strength of the software is that much of the control is handed to the learners themselves, giving them a much stronger sense of choice and ownership.
11.2.3 Learning designers and curriculum specialists are beginning to comprehend the potential of the new learning technologies. There is increasing interest in exploring the use of e-pedagogies and use of formative assessment methods as a way to better understand and support the learning process. Development in this area will require assessment on demand. Becta is a rich source of guidance on research and development in this area.

11.2.4 Interest in how technology can enhance the learning experience, and how it can affect and open up conversation, is seen to have real potential for the development of communities of practice and democratising learning organisations. The new learning technologies have the capacity both to cut across traditional hierarchical boundaries and also to unite whole organisations in addressing and contributing to the challenges of change.

11.2.5 One interviewee described all learning as "a conversational practice" - a conversation with those who are more expert than ourselves, with those on the same learning journey and with ourselves. We were struck in our interviews by the rapidly growing interest in the communicative and discursive potential of the learning technologies, whether through the use of teacher/learner interactions, peer conversations through chat rooms or communities of practice. There is interest in adopting Open Source systems such as Moodle (www.moodle.org) but concern has been expressed that the 'hidden' costs of 'free software' are not widely understood. A comprehensive description and evaluation of some of these development can be accessed by visiting http://www.aclearn.net/display.cfm?page=1393

11.2.6 Some interviewees saw such 'conversations' as a key driver of curriculum and pedagogical development, not only in the sense that such conversations can make it easier for educators to capture and analyse the contours of learners' learning interests and experiences, but also because it becomes possible to achieve a more rapid capture and transmission of emerging new and quality practices on the ground - the curriculum drivers and shapers of tomorrow. One of our interviewees linked the idea of conversation to the way in which the National Patient Safety Agency has used narrative - story-telling - as a way of capturing and communicating organisational memory.

11.2.7 Healthcare services have a powerful tradition of practice-led approaches to learning that are situated in and arise from individual and shared reflective practice. This was associated with the preoccupation among nearly all of those interviewed to better understand how to design learning that achieves a closer correlation between learning and practice, and how to measure and evaluate learning impact.

11.2.8 Constructivist approaches to learning are strongly rooted in healthcare service work-based learning philosophies and practice. Interesting thinking and practice are emerging in this area, in which on-line reflection, the idea of conversation with oneself and with others, is playing an important part. What is new is that learning technologies are enhancing our potential for understanding our own and others' learning processes and for informing and deepening them.

11.2.9 This can present new challenges. One interviewee described needing to reach agreement about which materials should be considered private and personal and which should be shared. There was awareness of the greater visibility and therefore comparability of interactions between educators and learners. This was seen to offer new opportunities for quality assuring the learning process. It was also seen as way of encouraging educators to agree new standards for educator accreditation.

11.2.10 In various ways, on-line reflection, enquiry and assessment are enabling learners to assimilate learning differently, review their progress, self-assess, get rapid feedback and compare themselves with others. There was strong support for the development of the critical thinking, creative and social skills that online collaboration can encourage.
11.2.11 We were given an example of a group of students who collaborated on writing a book on-line, each taking responsibility for a different chapter. They developed their ability to work as a team, evaluate their own contribution and style and also that of others. Effective learning can also help increase a practitioner’s confidence in his or her own judgement and agency. A national skills for life specialist (language, literacy and numeracy) described the impact of work-based skills for life learning on a healthcare assistant - "I trust my own judgement now, I don't need to go and ask".

11.2.12 The healthcare service has a number of active learning communities that are fostering a new 'interoperability between ideas'. Some of these are profession specific, others have arisen in response to new service demands and wider systems change e.g. multi and inter-professional working. Attention needs to be given to how best to administer and support such communities.

11.2.13 Among patients and service users there is increasing development and use of such networks, which have grown out of work to empower people with long-term conditions and expert patient programmes. Those with disabilities, the housebound and the elderly can derive real benefits from participating in such communities. They underlie the critical importance attached by the healthcare service to communication and active debate among service users, and to the very real emphasis now being placed on public and patient engagement in improving healthcare provision and the personalisation of health services. Boundaries are beginning to blur between professional and patient learning. We noted examples of professional websites that are open to patients and inform patients about current professional learning.

### Issue:
The healthcare service needs to recognise the value and potential of emerging learning methods and processes.

### Actions:
The National Governance and Strategy Board needs to include the use of these innovative collaborative tools and developments within its brief.

### Mid Term Actions

11.3 Preparing Managers

11.3.1 Managers, especially middle managers, find themselves under pressure to deliver demanding organisational objectives and targets while managing the complexities and demands of frontline services and the needs of staff. They are also critical catalysts of organisational change and can be the make or break of crucial organisational change programmes.

“No one will be sacked for not using the competency framework but they could be sacked for not delivering targets”.

11.3.2 The point is well made. The need to link learning to organisational bottom lines was seen as imperative. Otherwise, why would managers divert their attention from the priorities on which their and their team’s performance is judged?
Managers were also seen as responsible for some of the bad press that e-learning attracts. "e-learning has got to be seen as a more positive option - not just a managerial ploy to get people learning at midnight".

This was an issue echoed by others. Interviewees recognised that in cash-strapped healthcare service organisations that are dealing with staff shortages, the traditional 'time off' to learn, given by managers, was increasingly becoming 'a dying concept'. Staff may therefore choose learning they can do flexibly, in return for having their fees paid. There are still issues of perception and image that are attached to learning at work. This was captured in the comments "Attitude still is if you're on a computer, you're up to no good". A nurse learning using an iPod "would be seen as silly".

One interviewee described managers as being baffled by learning. This was associated with the deeply ambivalent attitudes to learning that are found within the service itself. The StLAR HR report www.stlarhr.org.uk states that it is the duty of employers to support the education and research enterprise that will deliver evidence based care and the next generation of employees. While there is widespread recognition that, in a very important sense, the healthcare service workforce embodies its intellectual and its social capital, this does not translate obviously from policy to practice. Nor does the service have a national learning strategy.

Many interviewees remarked on the need for learning and development to be HR led and a fundamental element of organisational development. Unless closely related to an organisation's workforce development strategy - through the organisation, through department and team, down to the individual - learning was seen to be "but the bluntest of tools".

Managers' worlds were said to be full of ring binders of products gathering dust, not linked to strategy.

Interviewees thought that the challenge for education developers was to develop products which deliver the culture change and behaviours managers want. In this sense e-learning was no different from other kinds of learning "It has to be on its toes, related to what managers need to deliver to improve services, to what individuals want to learn, in a way that is accessible to both".

Shifting the thinking of managers was identified as a key challenge. "They believe e-learning is not a reality because what's needed is not in place". Managers need learning to be made part of operational delivery. "We need to make it a reality to those who support staff". Interviewees suggested courses for managers to show them how e-learning can support them in their supervisory role, which would enable them to explore what e-learning can mean.

Managers can be persuaded to promote e-learning where it more effectively delivers what employees have to learn, for example statutory and mandatory training and training related to infection control. This driver arose from the requirement that Trusts demonstrate to the Healthcare Commission that employees have the required core skills. An additional advantage of e-learning is that it can capture evidence of employee participation, their assessment outcomes and accreditation.
11.3.11 Managers are key to inspiring staff enthusiasm and their motivation to learn. It was suggested that a good way of doing this was to find out from staff how they wanted to learn. Policies should be flexible; staff should be allowed to borrow laptops, to experiment at home, with trade-offs negotiated in return. The best way of promoting e-learning is through the service. "No good a boffin saying it's good, we need to hear it from learners. (We need .. ) as many advocates as there are learners who do e-learning".

11.3.12 Soon, the majority of healthcare staff can expect to have a post outline written in terms of KSF competences, placing the post in one of 9 KSF pay bands. Once appointed, a person progresses through the bands, with an associated pay increase, provided they meet the relevant competences. To progress, there must be evidence of the application of skills, not just that learning has taken place. Managers will need support to enable them to evaluate this.

11.3.13 Assessment of performance takes place via performance review conducted by the staff member and his/her staff manager. At this review, the staff member's developments are identified in terms of their KSF profile. Using the e-KSF these can be collated and aggregated at departmental, organisational and regional level. The e-KSF tool supports all aspects of the KSF development process. It allows organisations to manage the creation and storage of KSF post outlines. It allows reviewers and their staff to store information about how the employee is doing against their outline and to record personal development plans.

11.3.14 What it does not yet do is create a link to relevant training solutions. A repository of learning objects linked by the e-KSF to the KSF and the ESR would really be appreciated by managers. "Managers at appraisal, agreeing individual learning plans, need to be able to look at the screen and say "Why not try this?" That would tick the manager's box."

**Issue:**
A clear engagement strategy that takes on board the real life pressures experienced by busy managers needs to be developed as a priority. The strategy must demonstrate to managers how e-learning can benefit and add value to the delivery of their organisational objectives and targets.

**Actions:**
It is recommended that such a strategy is intelligently linked to managers' new supervisory roles and responsibilities.

11.4 Preparing Facilitators and Educators

11.4.1 For any e-learning strategy to succeed, it must include clear strategies for enabling educators to become competent and confident in using the new learning technologies. This includes the technical skills that educators need to enable them to access and manipulate ICT functions. It also means educators developing an understanding of the range and variety of ways e-learning technologies can serve the roles of teaching and learning, knowing how best to put them to use and how to create an effective learning blend.

11.4.2 Comprehending the full potential of learning technologies and their relation to other learning methods is still at the early stages. National and international, technical, pedagogical and process standards are being developed to support educators in their quest for excellence in the field. The challenge for educators is to be able to interpret and apply such standards to their specific learning purposes and outcomes and, in the case of work-based learning, to deliver the impact that it is the role of such learning to achieve.
11.4.3 To date, over-simplified and largely untested distinctions have been drawn between what e-learning can do when compared with learning through face to face interaction. Educators' early experiences of e-learning have often been negative, quality has often been poor and the uses to which e-learning have been put have frequently evoked the 'so what?' response.

11.4.4 This is changing. The Harnessing Technology Strategy published by the DfES recognises the importance of stimulating greater innovation in e-learning design, and is investing in the development of flexible learning design packages that will enable teachers from all sectors to build their own individual and collaborative learning activities around digital resources. Innovation in learning design and delivery are highlighting the importance of fully exploring the potential for technology to modernise the curriculum and its assessment.

11.4.5 This strengthening and bringing together of traditional areas of educator expertise in content and instructional design, for the purpose of e-learning, is being accompanied by the development of new learning facilitator, support and administration functions. Effective e-learning depends on learners being able to access help at times and in ways that suit them. Effective models exist of telephone and on-line learner support services, which enable new users of technology to secure the personalised support they require to help them develop their skills, confidence and ability to tackle problems as they encounter them. Innovative use of simulation and skills laboratories are also enabling development and assessment of practical skills in a supportive environment.

11.4.6 On-line professional development centres and educator-led communities of practice can be quality proof and cost-effective methods of achieving professional learning to scale. They can also act as catalysts for the specialist and educator innovation that must underpin the effective take-up and development of e-learning.

11.4.7 We have identified examples of effective approaches to organisational change within and across education institutions. The best involve a combination of well-led and managed 'carrot and stick' approaches that enable whole educator workforces to acquire new skills within agreed timescales. Rapid change can also be achieved opportunistically. This happens as a result of educators being asked to explore technological solutions to meet new service learning requirements. It can also happen where learning commissioners make inclusion of e-learning solutions a pre-requisite of specifications included in invitations to tender for development of e-learning materials.

11.4.8 Numerous references were made to the need to engage the educator workforce in e-learning. HEI and SHA interviewees were clear that unless engaged early on, and given ample opportunities to experiment and develop new competences in e-learning design, e-pedagogies and assessment, the educator workforce could pose a barrier to change.

11.4.9 This challenge is currently being tackled across the education sector. Strategies for engaging teachers in change, and websites to support organisations in developing their e-learning capacity, are set out in the DFES Harnessing Technology Strategy and on the Becta website. Interviewees told us that until e-competences are a mandatory part of all teacher training, educators who are averse to using the new technologies will have no incentive to change. Work needs to be done with Lifelong Learning UK (LLUK) to ensure the e-learning agenda is fast-forwarded.

11.4.10 The Social Care e-learning Strategy refers to educators in whatever capacity needing support in developing and using high quality content; understanding how people learn on-line, understanding learner diversity and the principles of inclusive learning, planning and managing on-line events and places (e-moderating) and planning and managing
on-line assessment (e-assessment). One interviewee referred to the need for educators to become skilled monitors and mentors who understand the potential of technology to enable people to learn and understand people’s different learning styles. They should “not be IT people, who sometimes take a ‘one size, one formula fits all’ approach”.

11.4.11 In further education colleges we identified examples of effective organisational approaches to change. In response to changes in the external LSC policy and funding environment which radically affect colleges’ traditional ways of working, staff groups of up to 3000 were required to develop their e-learning capability within a year. Managers were given the freedom to deliver their targets in the way they judged best and central resources on which they could draw - only the deadline was non-negotiable.

11.4.12 NIACE’s e-guides programme (see 11.1.10 above) offers access to web-based staff development training resources, which combine resources developed to implement learning across ACL plus purpose-built new resources. An early impact survey of e-guides (January 2006) shows a pre to post training shift from less than 40% to at least an 80% score for each skill needed to promote e-learning. E-guide co-ordinators from 81 organisations reported that they had cascaded training to 9000 educators within the two years the programme has been operating.

11.4.13 The recently published impact report results speak for themselves.
Impact survey results

Early results from the current impact survey (January 2006) indicate that less than 40 percent of E-Guides felt they had each of the skills needed for promotion of e-learning before E-Guide training, but by the end of the training this increased to at least 80 percent for each skill.

A - Develop models of cascade training.
B - Support colleagues in different areas when using technology.
C - Identify materials that enable colleagues to develop e-learning in their own curriculum areas.
D - Offer range of practical support to colleagues in developing their own e-learning skills.

Figure 11.1 Impact of E-Guides programme. Source: Chips with Everything Mar 06 NIACE

11.4.14 We benefited from discussing the StLAR HR Plan entitled 'developing and sustaining a world class workforce of educators in health and social care' with Dr Christine Jackson. Jointly commissioned by the DH and the DfES, the plan seeks to address the lack of clear career arrangements and complex employment arrangements affecting the 300,000 people estimated to be directly involved in healthcare related education and research work. Dr Jackson reported that the StLAR research has consistently picked up queries and requests from educators about e-learning. She would be willing to incorporate additional questions into the StLAR research to identify and seek solutions to educators' e-learning requirements.

11.4.15 The healthcare service has world class, internationally recognised, educators. Through e-learning, the service would do well to capture the knowledge and experience of its senior educators for the benefit of current and future educators and students alike.
11.4.16 Interviewees consistently highlighted the importance of developing work-based learning approaches to e-learning, which incorporate the impact of learning on practice and, in terms of wider systems change, into the learning design, assessment and metric. They insist that measurement and evaluation of e-learning must be in tandem with mainstream metrics and regulatory requirements. Some interviewees strongly believe that in order to achieve a better fit between individual and organisational learning priorities, learning has to be led by HR, rather than education, with managers taking more responsibility for learning. There is strong support for education and development becoming a core element of the Healthcare Commission’s remit, with consideration given to the development of core and developmental standards for learning.

11.4.17 Organising opportunities for assessment and finding assessors to carry them out has been a major challenge for the wider workforce over the last few years. Professional bodies were positive about their experiences of on-line assessment, which enables assessment to be fitted around the learner and to be extended if there are areas in which the learner is not yet competent or the placement cannot provide the additional practice needed. Exposure to a wider community of assessors means that judgments about the competence of individual learners are related more closely to professional consensus and moderation, preferably supported by appropriate educator and assessor training. Assessments can therefore be more closely linked to learning, rather than in searching for the ‘perfect’ assessment process.

11.4.18 Changes and pressures in the wider system have acted as powerful catalysts for educator led e-learning innovations and solutions. Modernising Medical Careers, the European Working Time Directive, pressures to reduce waiting lists, workforce shortages, the need for rapid professional up-skilling to meet changes in medical technology have all been identified and contributed as drivers to advances in e-learning. Collaboration has resulted in consensus and curriculum development across previously discrete and, as one interviewee described them, “silo areas”.

11.4.19 The UK has an integrated and coherent health and education system. The best examples of e-learning innovation that we saw were where curriculum and e-learning design experts came together to develop sector-specific learning solutions to identified service-wide problems. Experience has been that, where solutions have evolved within the ‘health eco-system’, they are more likely to be fit for purpose. This is an economical and efficient way of deriving returns on the substantial investment that the service is already making in learning. It has the additional advantage of leveraging quality solutions to scale that can be rapidly spread and adopted across the service. National standards are driven up and greater consistency in terms of learning quality and experience are made possible. This approach is capable of significant commercial exploitation. As one interviewee remarked “All the heavy lifting is done here and we export to where the money is”.

11.4.20 Crisis in the wider system is also stimulating innovation in content, pedagogy and assessment. This has meant addressing not only the specific knowledge and skills which health professionals must be able to demonstrate, but also the critical situational and performance contextual factors and conditions against which competences must be assessed. We saw well-conceived examples of stretching case-based learning, organised in terms of levels of complexity, enriched by being able to draw on leading edge service-wide knowledge and expertise and able therefore to offer leading edge learning across the service. We heard about developments using games technology that enable learners to assimilate knowledge by being immersed in situations, for example immersive anatomy. Such learning experiences were seen as radically extending the opportunities for learning by observation offered by more traditional methods. We also heard about the use of simulations that allowed the development of practical skills in a safe, dynamic and realistic environment. These extended the opportunities for training in multidisciplinary teams to develop teamwork and leadership skills.
11.4.21 During the research phase, service specific e-learning innovations and solutions were encountered in the work of professional bodies and HEI partnerships. Notable exceptions are the NHS core learning programmes (new NHS Induction Award) which have been designed for the whole workforce, are supported by NHS employers and endorsed by the Health and Safety Executive, National Patients Safety Agency (NPSA) and CNST.

11.4.22 More work needs to be done to identify and stimulate innovations in e-learning for the wider health workforce. There is some evidence that the recent shift towards demand led learning which is occurring in the FE sector is stimulating awareness among providers of the values of flexible learning, including e-learning. To widen the participation of the whole workforce in learning, it is essential that sector-led discussions with the LSC and the FE sector include exploration of service specific e-pedagogies and assessment, including assessment of performance, and are not limited solely to the e-delivery and support of already existing vocational programmes.

"Our A&E SHOs deliver service. Every 4 months I need to engage locums to cover our new SHOs so they can receive two days induction training - a cost pressure of £36K a year for my one A&E department alone."

11.4.23 We encountered an innovative and effective example in the North-West of an SHA using its purchasing power to stimulate an e-learning solution to the difficulties encountered by employers in allowing staff to take time away from the job to learn. This was not an uncommon example of the conflicts experienced by NHS managers. On the one hand, they are being required to expand the roles of existing staff, but giving staff time off to learn in the current climate of staff shortages can mean impairing the quality of front-line services. The SHA's solution was to fund a local HEI heath educator consortium to develop an e-learning option, then to manipulate market demand by making payment of course fees contingent on staff using the e-learning option.

11.4.24 Education providers with experience of offering high quality distance learning programmes were emphatic about the need for learners to have access to continuing learning and technical support. For such methods to work, and to avoid the high levels of drop-out that can occur, communication, at the times and in the ways that learners need it, is vital. This is especially the case for those juggling professional and care commitments. They need 'one click' access to learning and help on demand. For example, Newcastle College, the largest distance-learning provider in the country, offers a 24/7 learning and technical support service.

**Issue:**
There is a pressing need to identify the e-learning requirements of health educators and to develop high quality learning solutions that can be delivered rapidly to scale.

**Actions:**
Identify and utilise existing tools to undertake a needs analysis. At the same time identify and make available tools and resources for meeting educator needs.
**Issue:**
Commissioning and contractual arrangements should be used to ensure that the service achieves the learning solutions it requires.

**Actions:**
Liaise with DfES personnel who are leading on policy implementation relating to the wider systems reform. Explore how to embed health service e-learning in the ISIP process.

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**Issue:**
The healthcare service is very effectively using change in the wider healthcare system to stimulate innovative work-based learning solutions and to modernise the curriculum and its assessment. Systematic approaches now need to be developed to identify learning innovations that capitalise on and continue to define what is leading edge and, through collaboration, exploit and build on what is recognised as excellent in the field.

**Actions:**
The National Governance and Strategy Board should identify and manage funding which will drive forward collaborative and innovative ventures in this area for the benefit of all areas of the service.
12 Investment Case

12.1 The brief requested us to prepare an investment plan outlining both financial and quality benefits, including comparison with potential commercial providers.

12.2 It was subsequently agreed that we would not contact commercial providers, which limited the possibility of comparison with and between such organisations.

12.3 Known Initiatives

12.3.1 To help us develop an investment plan we have consulted with a number of projects/organisations that are utilising e-learning in the healthcare service. The projects are listed in Figure 12.1

<table>
<thead>
<tr>
<th>Project/Organisation</th>
</tr>
</thead>
<tbody>
<tr>
<td>NW Consortium</td>
</tr>
<tr>
<td>NEYNL WDC</td>
</tr>
<tr>
<td>R-ITI/Royal College of Radiologists</td>
</tr>
<tr>
<td>Royal College of Surgeons</td>
</tr>
<tr>
<td>Core Learning Programme/CLPU</td>
</tr>
</tbody>
</table>

Figure 12.1 - e-learning projects consulted

12.3.2 We have identified a number of other projects that are also using e-learning platforms but were precluded from consulting with them due the necessary time constraints of the project. These projects are listed in Figure 12.2 below

<table>
<thead>
<tr>
<th>Project/Organisation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Avon and Gloucester WDC</td>
</tr>
<tr>
<td>South West Peninsula</td>
</tr>
<tr>
<td>Bradford Royal Infirmary</td>
</tr>
<tr>
<td>Royal Berkshire &amp; Battle Hospitals NHS Trust</td>
</tr>
<tr>
<td>Derbyshire Mental Health Services NHS Trust</td>
</tr>
<tr>
<td>Electronic Staff Record</td>
</tr>
<tr>
<td>Healthcare Skills - The London Deanery</td>
</tr>
</tbody>
</table>

Figure 12.2 - other projects using e-learning

12.3.3 We do not expect the list in Figure 12.2 to be exhaustive. Across the healthcare service there is a widespread belief in the benefits of e-learning. This has led to a number of local initiatives and we expect developments to continue down this route unless an alternative strategy is put in place.

12.3.4 The NHS and Social Care e-learning Resources Database was established to provide a resource that contains details of e-learning activities in the healthcare service. We understand that this is not as up to date as it could be, due to a combination of a lack of capacity to maintain the database and the fact that e-learning projects are not required to register with the database.
12.3.5 Increasing numbers of local initiatives will exacerbate the risk of duplication of effort, replication of experience gained/lessons learned, variation in quality of learning and incompatibilities between systems.

12.3.6 Given that each local initiative should deliver sufficient benefit to justify the investment, proliferation of e-learning systems is not a bad thing per se, particularly if the alternative is a period of inactivity whilst a national strategy/system is put in place. However, the risks are very real and the potential costs are significant.

12.4 Benchmarking of Investment Cases

12.4.1 We have undertaken a more detailed dialogue with 3 of the projects listed in Figure 12.1 - NW Consortium, NEYNL and R-ITI. The objective of this activity was to attempt to quantify the benefits and costs associated with each project.

12.4.2 It is clear from this work that the costs of the various elements of an e-learning project are well understood.

12.4.3 The benefits sought from each project are also understood, in the sense that they have been listed in the various project initiation documents. However, the projects are all in relatively early stages of delivery. This means that there is, as yet, little hard evidence of the predicted benefits being delivered.

12.4.4 This is not a criticism of the projects. It is simply a reflection of the fact that benefits cannot be evaluated until sufficient learners have completed the available learning. In the cases of NEYL and NW Consortium this is expected to be next year. In the case of R-ITI, where it will take 3 years for the first cohort of trainees to complete the e-learning course, the benefits cannot be fully evaluated until 2008.

12.4.5 It should also be noted that there is a paucity of hard evidence of the benefits of e-learning programmes in other industries. In this sense there is little difference between e-learning programmes and training in general. It is difficult to isolate the specific impact of training from other effects. This makes it very difficult to quantify benefits in the way required by financial investment cases.

**Issue:**
The healthcare service needs to keep track of all the e-learning projects/initiatives that are under way within its constituent organisations. Ideally, it needs to build a collaborative community of practitioners around these projects to ensure that best practice and development effort is shared.

**Actions:**
It should be a requirement for all e-learning projects in the healthcare service to register with the NHS and Social Care e-learning Resources Database and keep their information up to date. The database should be adequately resourced and a community of good practice developed around it.

**Short Term Actions**
12.4.6 The impact of training on a business can be measured at six levels, which are summarised below:

- The reaction, satisfaction and planned actions of the learners.
- The learning achieved (assessment or accreditation at the end of the training).
- The application and/or implementation of what has been learned in the workplace.
- The impact on the business of the application/implementation of the learning.
- The return on investment that results when the cost of the training is balanced against the financial impact on the business.
- Intangible measures (for example stakeholder satisfaction).

12.4.7 Most training evaluation is measured in terms of learner reaction/satisfaction or learner achievement.

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**Issue:**
It is difficult to quantify benefits of training in general and e-learning in particular. This is not an healthcare service specific issue.

**Actions:**
Drawing on the best available practice in other industries and countries, undertake work to produce standard models of how to quantify e-learning benefits for use within the healthcare service.

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**Issue:**
Lead e-learning projects in the healthcare service will not be able to report back on evaluation of benefits for at least 12 months and possibly 36 months. There are two options - wait for these projects to report back or proceed on the basis of documented estimates of benefits and review these estimates (and the resulting business case) as the projects report back.

**Actions:**
The healthcare service should proceed on the basis of a business case derived from a set of documented estimates. The business case should be revised once the lead projects are able to report back with hard evidence of benefits.

12.5 Understanding the Position of e-learning in The Healthcare Service against a Major Programme Delivery Framework

12.5.1 The preceding analysis led us consider exactly where the healthcare service is with e-learning.

12.5.2 Irrespective of how it is deployed technically, the aspiration to use e-learning across the whole of the healthcare service represents a major programme. The Office of Government Commerce (OGC) has developed a framework to assist with the successful delivery of such programmes in the public sector. This includes a review process to provide independent reviews at key decision points in the delivery of programmes and major projects to check that they are ready to continue to the next stage. The OGC's process is called Gateway™ Reviews.
12.5.3 It is currently uncertain whether the healthcare service has an operational OGC-like Gateway™ process, but one has been drafted in terms of Corporate Governance and it is likely to be signed off and enacted in the next few months. It will apply to large-scale projects and procurements. Accordingly, for this report, we will express ourselves using OGC gateway review terminology.

12.5.4 There are six Gateway™ Reviews. Each one serves an independent review function as follows:

- **Gateway™ Review 0** is a repeatable review for programmes only. It is intended to ensure a strategic assessment of the programme, confirming or revisiting the need and checking that the programme is likely to achieve its intended outcomes.

- **Gateway™ Review 1** investigates the business justification for the project, checking that appropriate options have been identified and appraised and that affordability, achievability and value for money have been established.

- **Gateway™ Review 2** examines the procurement (or equivalent sourcing) strategy. It is intended to check that an appropriate procurement strategy has been developed and that requirements have been specified in a way that will encourage a good response from the market.

- **Gateway™ Review 3** confirms the investment decision. It checks that there are sound plans for implementation, risk and change. It also checks that the recommended contract decision is likely to deliver what is required on time, within budget and achieve value for money.

- **Gateway™ Review 4** investigates readiness for service. It aims to ensure that plans for managing implementation and operation are realistic and are shared and understood by the entire delivery chain.

- **Gateway™ Review 5** is repeated over the life of delivery of the programme. It checks that the expected benefits are being obtained and opportunities to achieve more benefits are taken up. It also checks that the relationship with suppliers and the potential to improve are being actively managed.

12.5.5 We are confident in the assertion that there is no Gateway™ Review process or similar in operation for e-learning in the healthcare service. Given the scale of e-learning activity that is likely in the healthcare service over the coming years we believe that there should be. Clearly, the healthcare service should use the governance process that it is developing, but it should not wait for the process to be signed off. Rather it should adopt the principles immediately and use them throughout the life of the road map.

12.5.6 The requirement placed on this project to prepare an investment plan indicates that e-learning in the healthcare service is currently in the initial Gateway™ Review 0 phase and is looking to move to Gateway™ Review 1.

12.5.7 We believe that the development of a business case, or more accurately a series of business cases covering each major training requirement in the healthcare service, is essential. Not only is it good practice as recommended by OGC, but it will be needed to secure commitment of financially very hard pressed organisations in the healthcare service.
12.5.8 The development and maintenance of adequate business case information is not a trivial task. In the initial phase it requires the development and refinement of assumptions based around existing available information. However, it will also need research into what has been done in other industries and countries and work to measure the impact of training and e-learning at all of the six levels of evaluation listed above. Once this has been done, the business case(s) need maintaining and reviewing throughout the life of the programme.

### Issue:
The adoption/implementation of e-learning in the healthcare service is a major technological and change management programme. As yet it does not have the disciplines appropriate to a major public sector programme.

### Actions:
The proponents of e-learning within the healthcare service need to assemble a programme structure suitable for a major technological and change management programme in the public sector and subject the programme and any major sub-programmes to the disciplines of a ‘phase/gate’ review process. If the healthcare service system is endorsed in the near future then this should be the review process that is adopted. If not then the GatewayTM Review process is recommended as a suitable alternative.

12.6 Initial Business Case

12.6.1 We have already alluded to the lack of evidence supporting quantified benefits of e-learning, both in the healthcare service and outside. Nonetheless, we have attempted to develop a ‘straw man’ initial business case for one of the main areas of healthcare service training - postgraduate medical training.

12.6.2 We must state that this case should not in any way be treated as definitive. It needs much more input from key stakeholders to improve the accuracy of the assumptions, particularly on the quantification of benefits. However, we feel that the creation of a financial model is a significant step forward, in that it provides a basis for criticism and improvement. Furthermore, the process of identifying an area with potentially significant benefits is instructive and could inform the development of further, more comprehensive, models. Finally, the business case model allows the creation of different scenarios, which give a feeling for the critical areas of investment and management.

12.7 Benefits Available

12.7.1 Many benefits have already been identified for the use of e-learning in the healthcare service. These can be summarised as:

12.7.2 **For learners:**

- Flexibility - anytime anywhere access to learning.
- Widened access to learning opportunities.
- Widened access to the knowledge base for health care.
- Self-paced learning with appropriate support.
- Active learning/knowledge sharing through collaborative working and online communities.
- Improved motivation and engagement.
- Potential for self-testing/self-assessment.
12.7.3 For employers:

- Flexibility of time and place of delivery of learning.
- New (and rapid) ways of disseminating knowledge/information with workers (e.g. email, chat, bulletin boards).
- Increased ability to test and assess staff capability/competence and the resultant quality and safety improvements.
- Increased consistency of teaching and learning across large numbers of learners.
- Improved recruitment and retention.
- Reduction in the administrative burden of training.
- Sharing and re-use of learning resources.
- Increased quality of learning resources.

12.7.4 Not all of these can be considered as producing direct financial benefit. However, the following do have direct financial impact:

- Reductions in the training budget (savings in staff (trainee) time, costs of travel, venue hire, etc).
- Increased productivity of staff involved in supervising trainees (much training in the healthcare service follows a ‘Master’ and ‘Apprentice’ model).
- Savings in medical negligence claims - CNST (There is a budget to cover such claims).

12.7.5 Additionally it can be considered that there are dis-benefits that can arise from sub-optimal implementation. Examples of these are:

- Duplication of content production costs.
- Duplication of VLE/MLE licensing costs.

12.8 Elements of Cost of e-learning

12.8.1 An e-learning programme comprises a number of elements that have direct costs. We have chosen to break these down as follows:

- Technical Infrastructure - the equipment that hosts the e-learning material and manages the interaction with learners.
- Learning Content - the material that the learner uses to gain knowledge. This includes cost of developing the e-learning material and the cost of any IPR used in the material.
- Engagement and support - these are the costs associated with getting the learner successfully using the technical infrastructure and learning content, together with any additional learner support mechanisms (e.g. on-line mentoring/tutoring).
- Access infrastructure - equipment that allows the user to gain access to the Learning Content and support from wherever they choose.

12.9 Segmentation of Healthcare Service Training

12.9.1 In order to develop a meaningful business case, we believe that it is appropriate to focus on a particular group within the healthcare service. The vast majority of the healthcare service training budget is covered by MPET (Multi-Professional Educational Training). MPET is composed of:
12.9.2 Undergraduate Medical Training (SIFT)

12.9.2.1 This covers the costs associated with the education of medical students in medical schools of local universities and their ‘on the job’ clinical training from consultants based in healthcare service hospitals or doctors in primary care. The universities' costs include provision of lecturers, administration, facilities such as lecture theatres, together with related overheads such as heat, light and power. Costs at healthcare service hospitals include the proportion of consultant time spent in giving training in a clinical environment both at the patient’s bedside and elsewhere. It also covers accommodation and facilities specifically set aside to allow student access to a range of training media.

12.9.2.2 This budget is allocated by a partnership comprising NHS/DH, the Higher Education Funding Council (HEFC) and Universities (HEIs).

12.9.2.3 The SIFT budget for 2005-6 is approximately £1.00bn.

12.9.3 Postgraduate Medical Training (MADEL)

12.9.3.1 This covers the costs of post-qualification training and development of medical and dental staff in hospitals, GP surgeries or dental practices. Most of the training is coordinated and paid for through Postgraduate Deaneries. Postgraduate training currently follows a model akin to an apprenticeship, with a recently qualified doctor assigned to train with a senior consultant, effectively ‘learning on the job’. Although the detail varies significantly with the specialty, doctors work and learn through observation, experience and practice. This means that they have to learn whilst working - with consequent direct costs (attendance at training courses, lectures, etc.), impact on their productivity and impact on the productivity of their supervising consultant.

12.9.3.2 This budget is co-ordinated through the Postgraduate Deaneries.

12.9.3.3 The MADEL budget for 2005-6 is approximately £1.50bn.

12.9.4 Other Health Professionals (NMET)

12.9.4.1 This funding covers the education and training costs of all healthcare service professionals who are not doctors. Therefore all nurses, midwives, health visitors, allied healthcare professionals (AHPs) and health scientists are covered. The AHP category includes physiotherapists, radiographers and speech therapists. Support for non-professional staff groups, including administrative and ancillary staff, is normally supported from separate ILA and NVQ funding.

12.9.4.2 This budget is directed by the Strategic Health Authorities, who commission courses from Higher Education Institutions.

12.9.4.3 The NMET budget for 2005-6 is approximately £1.75bn. Approximately £0.5bn of this spent on student bursaries. Approximately 95% of the remainder is spent on undergraduate courses.
12.9.4.4 For purpose of this business case illustration we decided to focus on the Postgraduate Medical training budget (MADEL) for four main reasons:

- The budget is controlled and spent completely within the healthcare service, whereas the other budgets are collaborative or commissioning arrangements with HEIs.
- The trainers are hospital consultants, who are very expensive training resources.
- The trainees are themselves salaried, meaning that time spent on training is a cost to the system.
- There is some good evidence of likely costs of implementation of an e-learning system and the costs of developing content from the R-ITI project.

12.9.4.5 Figure 12.3 identifies the purpose and current budget level for the MADEL Budget:

The MADEL budget

- Covers the costs of post-qualification training and development of medical and dental staff in hospitals, GP surgeries or dental practices.
- Most of the training is coordinated and paid for through Postgraduate Deaneries.
- Postgraduate training currently follows a model akin to an apprenticeship, with a recently qualified doctor assigned to train with a senior consultant, effectively ‘learning on the job’. Although the detail varies significantly with the specialty, doctors work and learn through observation, experience and practice. This means that they have to learn whilst working - with consequent direct costs (attendance at training courses, lectures, etc.), impact on their productivity and impact on the productivity of their supervising consultant.
- The MADEL budget for 2005-6 is approximately £1.50bn and is co-ordinated through the Postgraduate Deaneries.

Figure 12.3 - MADEL Budget

12.9.5 Business Case for Postgraduate Medical Training

We have attached a simple business case for the deployment of e-learning across the whole of postgraduate medical training as Figure 12.4
Case proposed is made upon following assumptions:

- Implementing a completely e-learning based solution across the whole of postgraduate medical training, which is similar in programme outline to the R-ITI project, will produce overall savings of 10% for MADEL. This will be made up of a combination of reduction in the study leave budget, reduced costs of trainees attending training, increased productivity of trainees and increased productivity of consultants.

- The benefits accrue in proportion to the amount of training that has been converted to e-learning. 50% of the annual benefits accrue in the year after the conversion to e-learning. 100% of the annual benefits accrue each year thereafter.

- The cost of developing e-learning content for the whole of postgraduate medical training is £125M spread over 5 years.

- The cost of a repository/VLE for the content is assumed to be £2M in year 1, to cover software licensing, and £750K pa thereafter, to cover hosting and technical support costs.

- No provision needs to be made for engagement as the users are all ICT literate and will increasingly be used to e-learning as a result of their recent progress through University.

- Mentoring costs are built in to the existing programme. Efficiency savings are included in the 10% overall reduction in budget.

- No provision needs to be made for access as the trainees will be working in locations that already have adequate provision of PCs and network access in the workplace. They are also likely to have PCs at home.
12.9.6 The Potential for Other Areas of Healthcare Service Training

12.9.6.1 The model presented above probably targets the most attractive financial case for e-learning in the healthcare service. This arises from the high cost specialised nature of the training, the fact that the trainees are salaried (and therefore there is a cost to having them attend training) and the fact that all the benefits accrue to the healthcare service.

12.9.6.2 Because of the partnership working with HEIs in the other areas of professional training, it seems reasonable to expect that any benefits from e-learning would be shared between the healthcare service and the HEIs involved. Furthermore, as undergraduates, these trainees are not salaried, removing another area of significant benefit.

12.9.6.3 However, this does not mean that there is no financial justification for e-learning in the other areas. Rather it means that each area has to be considered on its own merits, with a case developed for that area. We would suggest that a significant business case could be developed to support a consistent approach to provision of statutory and mandatory training within the NHS.

12.9.6.4 Factors that are likely to make the financial case attractive are:

- Re-use of content already developed for postgraduate medical training in other areas.
- Content with a wide applicability across professional groups.
- Content with a low cost of creation.
- Content that addresses postgraduate/employee training rather than undergraduates/students.
- Content that addresses the needs of NOS and KSF linked developments.

12.9.6.5 We suspect that there is a strong business case for a national programme of e-learning for statutory and mandatory training as these requirements affect the whole of the healthcare workforce. However, it is difficult to produce a realistic top level estimate of the benefits available from using e-learning for these programmes. There are three reasons for this:

- Time/resource constraints on this project.
- The fact that the budget for such programmes is not disbursed centrally and is not therefore readily identifiable.
- Difficulty in producing a realistic top level estimate of the benefits available from using e-learning on such programmes.
12.9.7 Scenarios around Business Case

12.9.7.1 The creation of a model of the kind given in Figure 12.3 enables the development of scenarios based on different assumptions. For example, Figure 12.4 is the Postgraduate Medical Training example reworked to model the same outcome but with 5 separate purchases of VLEs with content developments overlapping by 20%.
The assumption made in this scenario - that the cost of 5 separate VLEs is double that of a single, large one - is an informed guess, but illustrates the principle that, whilst not completely removing it, the dis-benefits of multiple disparate projects could reduce the available benefit by a significant amount.

**Issue:**
There is no well-developed and robust financial case for investment in e-learning in the healthcare service. Such a case is essential to proceed through any meaningful ‘phase gate’ review process (Gateway™ Review or healthcare service specific).

**Actions:**
Work should be undertaken as matter of urgency to produce a well-developed and robust financial case for investment. A team/working group should be set up as soon as possible and tasked to produce a business case suitable for presentation to a Gateway™ Review 1 or healthcare service equivalent within the next 3 months.

**Issue:**
Different areas of the healthcare service workforce have different training requirements and metrics. This means that one business case will not meet all requirements. Indeed there will need to be many different business cases.

**Actions:**
Business case work should be standardised as far as possible to minimise the effort in producing internal business justifications.

Wherever possible, business cases should attempt to build incrementally on existing cases. This will require an initial piece of work to target the most attractive areas for initial investment. N.B. It is not necessarily the case that medical training will always be the most attractive option. There could be areas where a standard block of content that reaches a large proportion of the workforce could be equally attractive - for example provision of statutory and mandatory training.

Initial business case development should consider a range of investment possibilities, including national statutory and mandatory programmes, in order to provide guidance on how investments should be prioritised.

**Issue:**
It is difficult to quantify the costs (financial and non financial) of a less co-ordinated approach to e-learning and its implementation.

**Actions:**
Scenario modelling/options appraisal offer solutions to this problem and should be followed through as part of the development of any business case. The scenarios need to be based on accurate information - for example the pricing of multiple VLEs.
12.9.8 Develop Models of Return on Investment

12.9.8.1 The business case for a Gateway™ Review 1 will need to be based on a number of assumptions. These should be developed to be as accurate as is reasonably possible within the desired timescale for this review (3-6 months hence). However, the real payback from the shift from a trained workforce to a learning workforce should come from improved business performance. The problem is how to measure such improvements.

12.9.8.2 This is not a problem that can be solved overnight, but the need for a solution should be recognised now and initiatives put in place to develop models of return on investment. These will involve academic research and the evaluation of a number of consultancy techniques to quantify the Return on Investment of training and e-learning that are currently available ‘off the shelf’, mainly in America.

12.9.8.3 It is important that current initiatives are resourced to examine the financial impact that they have on the business of the healthcare service and that hard evidence is brought into any models so that they reflect reality rather than some idealised model.

12.9.9 Investment Management

12.9.9.1 The manner in which we have approached the development of the initial business case illustrates that different groups within the service have significantly differing training requirements. This indicates that there will be different business cases for e-learning for individual groups.

12.9.9.2 The existence of various business cases and the reality of a finite and probably restrictive investment budget means that decisions will need to be taken to prioritise and schedule investments in e-learning, particularly e-learning content.

12.9.9.3 Clearly this process will become more sophisticated over time, as knowledge and experience of delivering benefits from e-learning increases. However, an e-learning investment framework needs to be put in place that provides a structure for balancing differing needs and priorities. This framework needs to be sufficiently simple and robust to operate, be understood and used by all groups within the healthcare service that are likely to make e-learning investment decisions.

12.9.9.4 The framework will need to be developed as knowledge and experience of the impact of e-learning increases. Two areas will need particular focus:

- Incorporation of qualitative benefits in a valid manner.
- Re-investment of a proportion of the benefits obtained in further e-learning. This latter mechanism is key in ensuring the sustainability of e-learning.
12.9.10 Reviewing Benefits Obtained from Early Initiatives as the Projects Report

12.9.10.1 It has been mentioned earlier that a number of existing e-learning projects are currently under way in the healthcare service but will not be in a position to produce substantial evidence of benefits until they have been completed. This could be anything from 12-36 months hence, depending on the particular project.

12.9.10.2 It is crucially important that these projects are supported in the evaluation and reporting of the benefits achieved and that this ‘hard’ evidence is fed back into the Return on Investment modelling and Investment Management process.

Issue:
‘Hard’ evidence of the benefits of e-learning projects in the healthcare service will only emerge over the next 12-36 months as various projects are completed and assess their impact.

Actions:
A ‘phase gate’ review process should be used to garner evidence of benefits from e-learning projects both inside and outside the healthcare service. These should be used to update the business case models. The cycle for updating should be derived from when the various projects are due to report.

12.9.11 Post Investment Review

12.9.11.1 The Gateway™ Review process requires that a Gateway™ Review 5 is repeated over the life of delivery of the programme. It checks that the expected benefits are being obtained and opportunities to achieve more benefits are taken up. It also checks that the relationship with suppliers and the potential to improve are being actively managed.

12.9.11.2 Given that we are currently talking about e-learning being between an initial Gateway™ Review 0 review and Gateway™ Review 1, it may seem a little premature to be talking about Gateway™ Review 5. However, the preceding section demonstrates the need to undertake regular reviews of the investments made and benefits derived. This must become a core part of the culture of the programme.
12.9.12 Summary

12.9.12.1 Given the current climate for change, the imperative of securing best value from investments, the potential and increasing ubiquity of new learning technologies and the potential for the healthcare service to learn and benefit from the experience of other public sectors deployment, the time is right for the healthcare service to systematically plan and encourage the wider adoption of e-learning. Inescapably, given the wider transformation of education, training and objective assessment, e-learning has to become an integral component of learning delivery. Unless the healthcare service implements a road map such as proposed here, a chaotic, inefficient and ineffective approach will surely result. Inevitably, this will be to the detriment of the healthcare service. We assert that this need not be the case, indeed there is evidence of developments which could attract international acclaim and commercial opportunities. Thus a considered and energetic approach at all levels within the NHS is now needed to deliver this potential. We are confident that the actions articulated here will go some way to achieve this.
### Glossary

<table>
<thead>
<tr>
<th>Acronym</th>
<th>Expansion</th>
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<td>24/7</td>
<td>All day every day - (24 hours/day, 7 days/week)</td>
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<td>Accident and Emergency</td>
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<td>Adult and Community Learning</td>
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<td>ADL</td>
<td>Advanced Distributed Learning</td>
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<td>AHP</td>
<td>Allied Healthcare Professional</td>
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<td>British Educational Communication and Technology Agency</td>
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<td>Blog</td>
<td>Weblog</td>
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<td>British Petroleum</td>
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<td>Digital TV</td>
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<td>ECDL</td>
<td>European Computer Driving Licence</td>
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<td>e-GIF</td>
<td>e-Government Interoperability Framework</td>
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<td>electronic Knowledge and Skills Framework (tool)</td>
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<td>e-learning Quality Assurance Group</td>
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<td>Framework for Information Sharing in a Multi-Agency Environment</td>
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<td>Financial Times Stock Exchange 100 index</td>
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<td>Individual Learning Account</td>
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<td>IMS</td>
<td>IMS Global Learning Consortium</td>
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<td>Apple iPod media player</td>
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<td>(community-wide) Integrated Service Improvement Plan</td>
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<td>National Vocational Qualification</td>
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<td>National Workforce Group</td>
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<td>ODPM</td>
<td>Office of the Deputy Prime Minister</td>
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<td>OJEU</td>
<td>Official Journal of the European Union</td>
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<td>OSS</td>
<td>Open Source Software (or Systems)</td>
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<td>Payment by Results</td>
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<td>Road map for Transformational Change</td>
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<td>University for Industry</td>
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<td>VLE</td>
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<td>W3C WAI</td>
<td>World Wide Web Consortium Web Accessibility Initiative</td>
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<td>WAPAF</td>
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<td>Workforce Development Confederation</td>
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<td>Web Services</td>
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## Appendix 1 - List of Documents and Initiatives Reviewed

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<th>Document/Initiative</th>
<th>Date</th>
<th>Source/Author</th>
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<td>1</td>
<td>Promoting Best Practice Approaches to e-Learning in the NHS</td>
<td>April 2004</td>
<td>Mike Farrell</td>
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<td>2</td>
<td>Health Reform in England: Update and next steps</td>
<td>Dec 2005</td>
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<td>3</td>
<td>Guidelines to inform the development of e-Learning in the NHS</td>
<td>December 2003</td>
<td>University of Salford</td>
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<td>4</td>
<td>DfES Harnessing Technology Transforming Learning and Children's Services</td>
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<td>5</td>
<td>Standards for Better Health 2004/5</td>
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<td>6</td>
<td>A strategic approach to developing e-learning capability for healthcare</td>
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<td>North and East Yorkshire and North Lincolnshire SHA</td>
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<td>7</td>
<td>Our health, our care, our say: a new direction for community services</td>
<td>January 2006</td>
<td>Department of Health</td>
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<td>8</td>
<td>Assessment for Improvement - Healthcare Commission</td>
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<td>9</td>
<td>Becta's View - E-Assessment and portfolios</td>
<td>January 2006</td>
<td>Becta</td>
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<td>10</td>
<td>Benchmarking e-learning: An Overview for UK HE</td>
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<td>Paul Bacsish</td>
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<td>11</td>
<td>Creating a Patient-led NHS Delivering the NHS Improvement Plan</td>
<td>March 2005</td>
<td>Department of Health</td>
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<td>13</td>
<td>DRAFT Implications of the case for change for the education sector</td>
<td>2005</td>
<td>Skills for Health</td>
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<td>14</td>
<td>Sector Skills Agreement for Health: Emerging Themes from work to date on stage 1 of the SSA</td>
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<td>15</td>
<td>HEFCE strategy for e-learning</td>
<td>March 2005</td>
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<td>16</td>
<td>Intellectual property rights in e-learning programmes</td>
<td>2003</td>
<td>HEFCE Working Group</td>
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<td>17</td>
<td>National Standards, Local Action Health and Social Care Standards and Planning Framework</td>
<td>July 2004</td>
<td>Department of Health</td>
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<td>Supporting best practice in e-learning across the NHS</td>
<td>November 2005</td>
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<td>19</td>
<td>Releasing Resources to the Front Line: Independent Review of Public Sector Efficiency ('Gershon review')</td>
<td>July 2004</td>
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<td>20</td>
<td>StLAR HR Plan Project – Phase 2 Strategic Report: Developing and sustaining a world-class workforce of educators in health and social care.</td>
<td>June 2004</td>
<td>Professor Tony Butterworth and Christine Jackson, Director of Research, University of Lincoln</td>
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<td>21</td>
<td>Mobile technologies and learning: A technology update and m-learning project summary</td>
<td>2005</td>
<td>Jill Attewell, Technology Enhanced Learning Research Centre, LSDA</td>
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<td>22</td>
<td>CELTS: Websites of Centres for Excellence in Learning and Teaching</td>
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<td>23</td>
<td>A few highlights from our plan - Presentation on the new NHS Institute</td>
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<td>Professor Bernard Crump</td>
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<td>A Joint e-learning Strategy for the NHS in North and East Yorkshire and North Lincs 2003-2008</td>
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<td>Delivering e-learning in the NHS - Getting the Blend Right: Update on Implementation Strategy</td>
<td>Feb 2005</td>
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<td>27</td>
<td>Delivering e-learning in the North West NHS. e-learning Strategy Toolkit - A Common Strategy for Cheshire and Merseyside Workforce Development Confederation</td>
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<td>Cheshire and Merseyside WDC, Cumbria and Lancashire WDC, Greater Manchester WDC.</td>
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<td>Radiology Intergated Training Initiative: Process and Documentation for Stages 1-13</td>
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<td>29</td>
<td>Selecting and Implementing a Virtual Learning Environment. CD-ROM</td>
<td>2004</td>
<td>Cumbria and Lancashire SHAs, NHSU</td>
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## Appendix 2 - List of Interviewees

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<th>Universities collaborating in e-learning</th>
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<td>IVIMED and IVINURSE</td>
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<td>DH - Widening Participation</td>
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<td>Prof Gavin Kenny</td>
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<tr>
<td>Royal College of Pathologists</td>
<td>Dr Jem Rashbass</td>
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<td>R-ITI</td>
<td>Mr John Taylor</td>
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<td>University of Chester</td>
<td>Mike Brownsell</td>
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<td>Office of Strategic Health Authorities</td>
<td>Dr Linda Hutchinson</td>
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<td>CETIS</td>
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<td>Connecting for Health</td>
<td>Dr Phil Candy</td>
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An e-learning Road Map for the NHS

Questionnaire for consultees

February 2006
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<td>Date</td>
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<td>Interviewer</td>
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</table>
Section 1 - Strategic positioning

1. With your knowledge of everything that is happening in/with the service at the moment what do you think the NHS will look like in 3-5 years?

2. How do you feel about that?

3. What leads you to think/believe that?

4. How should the NHS respond to these learning challenges?

5. Since the main focus of this research is e-learning, what do you believe to be the main challenges for e-learning?

6. Let's think about e-learning solutions. What have you considered that could work?

7. What would that require/involve?

8. What would be the biggest challenge for you in e-learning delivery?

9. Do we know enough about new learning technologies to know how we could use them to support major implementations?

10. Does the NHS need to be concerned about e-learning? (Is it an issue? Won't it self regulate? Run by market forces?)

Section 2 - e-learning road map

Strategy and Coordination

1. Do you believe that there should be more co-ordination of e-learning strategy and implementation within the NHS? Please explain your answer.

2. If the answer was yes, who should give the mandate for any e-learning strategy?

<table>
<thead>
<tr>
<th>Nationally with regional tiers</th>
<th>Regionally with a loose relationship between regions</th>
<th>Other, please specify</th>
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4. If you support the idea of a coordinating body, what responsibilities do you believe such a body should have? For each one you agree with, please
a) rate their importance as: (5 = high 1= low; n = no view), and
b) what would be the most appropriate structure for such a mandate (Nationally N or Regionally R or Locally L)

<table>
<thead>
<tr>
<th>Question</th>
<th>Importance</th>
<th>N</th>
<th>R</th>
<th>L</th>
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<tbody>
<tr>
<td><strong>Strategy</strong></td>
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<tr>
<td>i) Developing the overarching strategic approach (standards; material repository; foster economies of scale)</td>
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<td>ii) Linking developments to major initiatives - Agenda for change, NOS, credit Framework etc</td>
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<td>iii) Accessing /obtaining data on employer e-learning needs</td>
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<td>iv) Mapping current e-learning provision and analysing gaps</td>
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<td>v) Ensure the ICT infrastructure can support / sustain effective e-learning</td>
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<td>vi) Establishment of a common Managed Learning Environment (MLE) for the NHS</td>
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<td><strong>Developing Quality Standards and Guidelines</strong></td>
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<td>vii) Overseeing and ensuring the development of best practice standards and guidance</td>
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<td>viii) Quality assurance - standards and guidelines for design and development of e-learning</td>
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<td>ix) Guidelines and standards for e-learning authors, managers, facilitators and trainers</td>
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<td>x) Evaluation tools</td>
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<td><strong>Best Practice Materials/Development</strong></td>
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<td>xi) A library of approved e-learning materials / learning objects</td>
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<td>Toolkits on:</td>
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<td>xii) Learning design (for developers)</td>
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<td>xiii) Organisational readiness and good practice guidance</td>
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<td>xiv) Management and best practice</td>
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<td>xv) Best practice support</td>
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<td>xvi) The development of core NHS materials</td>
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<tr>
<td><strong>Support</strong></td>
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<td>xvii) Providing advice on the value of e-learning intellectual property</td>
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<td>xviii) Advice and guidance service to organisations wishing to implement e-learning solutions</td>
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<td><strong>Purchasing/Funding</strong></td>
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<td>xix) Using the purchasing muscle of the sector to deliver economies of scale in development and delivery</td>
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<td>xx) Identifying sources of funding for development and delivery</td>
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<td><strong>Communication and engagement</strong></td>
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<td>xxii) Raising awareness of the benefits of e-learning to employers and employees and building on the current level of employer engagement</td>
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<td><strong>Brokerage</strong></td>
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<td>xxii) Stimulating the supply of cost effective development solutions to meet defined needs/ gaps</td>
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5. What key initiatives (both inside and outside the NHS) is it important to ensure dovetail with an NHS ‘approach’ to e-learning?

6. Do you have any other suggestions that would assist the sharing and more effective use of resources?

7. Is there anything that the NHS should do additionally or differently to ensure that e-learning is developed and embedded?

8. How can we help ensure that any major investment in e-learning is sustainable?

**Nurturing the right environment**

9. Looking at the needs of the sector what do you see as the main priorities for adopting and developing e-learning?
   For each one, please rate their priority as: 5 = very important 1= not important; n = no view

<table>
<thead>
<tr>
<th>Importance 1-5</th>
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<tbody>
<tr>
<td>i. More ‘just in time’ approaches to education and training</td>
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<td>ii. Freeing up staff time to study</td>
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<td>iii. Developing new approaches to education and training which use the workplace as a key learning resource</td>
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<td>iv. Access to bite sized chunks based on learning objects</td>
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<td>v. More provision linked primarily to skills development rather than simply acquisition of knowledge</td>
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<td>vi. More use of simulations</td>
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<td>vii. Need to develop more blended learning solutions</td>
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<td>viii. Need to link opportunities with:</td>
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<td>· KSF</td>
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<td>· Occupational and or professional standards</td>
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<td>· Outcomes of personal development planning</td>
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<td>ix. Ensure staff have the confidence, ability and desire to access e-learning</td>
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<td>x. Others, please specify:</td>
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**Evidence of benefits**

10. What would be your measures of success regarding the impact of e-learning?

11. Do you have any suggestions for how this could be done?