

Health Informatics Future Leaders Scheme - Final Report

NHS Connecting for Health Agency

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Executive Summary

High quality and credible education, training and development with good direction and leadership are essential components to ensure the NHS has an effective Health Informatics (HI) workforce now and for the future. The Health Informatics field does not just apply to Information Management and Technology (IM&T) professionals but includes information management, information communication technology, health records, knowledge management, clinical informatics and Health Informatics Senior Managers and Directors of Services.

NHS Connecting for Health (NHS CfH), the new Department of Health Agency responsible for delivering the National Programme for Information Technology (NPfIT), commissioned this project to assess the requirement for a Health Informatics Future Leaders Scheme within the NHS and to consider the possible options for developing current and new staff to meet these requirements.

The requirement of NHS CfH is to undertake research within and beyond the NHS to establish whether there is a need for a leadership development scheme for HI staff. Once this research question is answered, an assessment of NHS readiness is required. Finally, details are needed to explain what types of development schemes would be appropriate.

This report outlines the approach adopted in this research. It explains the aims and objectives of the project, the scope, research framework and methodology, as well as identifying the key stakeholder groups.

The requirement and readiness section outlines the main findings from the research. It has clearly identified that a need exists and the different components of that need. The section has further described the lack of readiness of the NHS as perceived by the key stakeholders and outlined ways in which aspects of that lack of readiness can be addressed.

The delivery section of the report asserts that a future HI leaders scheme alone would be inadequate. It outlines a range of actions that are needed to develop the HI discipline, including the development of future leaders. The report describes a wide range of currently available training and development programmes and also demonstrates that further developments are needed. Ideally, the development needs of a group of staff within a defined discipline would be determined by workforce planning. That is, structured surveys and research would identify the present characteristics of the workforce, the strategic context in which they operate together with the required workforce profile in, say, five years hence. A modelling exercise would then identify any skills gap or need to adjust the present workforce structure and the required developments would be put in place.

Our research has shown, there is a dearth of workforce data on HI staff in the NHS and consequently, no workforce planning. This need is already recognised and steps are being taken by ASSIST, with formal support, to close this information gap.

In the absence of workforce data, our recent research is an invaluable source of key stakeholders' views on what developments are required for HI staff. This range of developments may be addressed by existing training schemes but a more structured and pro-active approach is needed to ensure these schemes are appropriately utilised in staff development.

Many of the key stakeholders argued that leadership development is needed and that the need is for generic leadership skills. However, the majority of interviewees also made it clear that leadership development within the domain of healthcare would have added value rather than generic leadership development carried out with no reference to the care environment. In other

words, understanding such things as the politics of NHS organisations, together with the way, for example, an outpatient clinic is run, will provide a better framework within which leadership skills could be developed.

A more robust and reliable means of meeting identified HI training and development needs is required and this now likely to develop as a result, partly, of the implementation of the Knowledge and Skills Framework and Agenda for Change and, partly, as a result of the greater importance attached to better HI. This will require ongoing, top-level support.

Chief Information Officers (CIOs) and Chief Executive Officers (CEOs) each have a critical role to play in the above developments as part of the development of national champions to encourage and support the development of the profession of HI.

Conclusions

Health Informatics has made progress over the last few years. Some of this impetus was provided by “Making Information Count” as it set the strategic direction for developments. However, additional initiatives with high profile and stronger co-ordination are now required to ensure that robust processes and procedures are put in place to take this young discipline into a respected professional body with the associated characteristics of such bodies.

The business drivers for these initiatives, which are made explicit in the report, are clearly understood by many, although not yet all.

No single solution will suffice; the range of measures required should be supported by NHS CfH and delivered by a range of organisations including professional and registration bodies, academic institutions, Workforce Development Directorates, the NHS Institute for Innovation and Improvement and existing training providers.

This range of measures must be monitored, maintained and reviewed in a co-ordinated way by NHS CfH, providing a definitive view on the range of services and schemes to support individual and professional development.

NHS Connecting for Health inherited the responsibility to develop HI professionalism from the NHS Information Authority. HI is not yet as established as, for example, the NHS Finance profession. There is a lack of national champions for HI development compared with Finance and there is a need for these champions to endorse moves to strengthen the development of the HI profession.

There is clearly a role for the NHS CfH, working with professional associations and others to facilitate and resource some of this enabling work. Partnership working will be key to the establishment of a coherent professional body, as will the adoption of a portfolio approach, tailoring facilities and options to suit differing requirements. The biggest challenge is around resourcing and longer-term investment – this is not a quick fix exercise and a medium term business plan with clearly identified and costed priorities is required.

1 Introduction

1.1 Background

1.1.1 High quality and credible education, training and development with good direction and leadership are essential components to ensure the NHS has an effective Health Informatics (HI) workforce now and for the future. The Health Informatics field does not just apply to Information Management & Technology (IM&T) professionals but includes information management, information & communication technology, health records, knowledge management, clinical informatics and Health Informatics Senior Managers and Directors of Services.

1.1.2 NHS Connecting for Health (NHS CfH), the new Department of Health Agency responsible for delivering the National Programme for Information Technology (NPfIT), has commissioned this project to assess the requirement for a Health Informatics Future Leaders Scheme within the NHS and to consider the possible options for developing current and new staff to meet these requirements.

1.2 The Requirement

1.2.1 The requirement of NHS CfH is to undertake research within and beyond the NHS to establish whether there is a need for a leadership development scheme for HI staff. This research includes consultation with key stakeholders in the NHS, staff within the NHS HI community, as well as academic institutions and students.

1.2.2 The aim of the project is to assess the requirement for a HI Future Leaders Scheme and to identify options for its delivery. In particular to provide answers to the following questions:

- Whether there is a need for a national approach to support the development of HI leaders and if so, the scale and nature of the need.
- What are the options for developing any HI Future Leaders scheme or framework, and how might any national scheme be implemented locally?
- What can be learnt from existing schemes to inform the development of a HI Future Leaders Scheme?

1.2.3 A HI Future Leaders Scheme is one approach to developing the required workforce. Its creation becomes more feasible in the current context where Health Informatics is becoming a recognised discipline and occupational group within the NHS, skill sets and occupational standards have been defined, and a professional registration body has been formed.

1.2.4 NHS Connecting for Health has commissioned Tribal Secta to undertake research engaging with key stakeholders to answer the above questions.

1.3 About this Report

1.3.1 The HI Future Leaders Scheme Project was undertaken by Tribal Secta during the period 31st August – 30th November 2005.

1.3.2 This report provides an integrated and comprehensive document, as well as comprising discrete sections and enables the reader to follow the logical development

of the required scheme(s). It follows a logical flow of data gathering, evidence sifting, analysis and options development.

1.3.3 Sections contained within this document are:

- Section 2 sets the project context.
- Section 3 describes the project approach.
- Section 4 discusses the requirement for and the readiness of the NHS of a Future HI Leaders scheme.
- Section 5 details the delivery of a Future HI Future Leaders scheme.
- Section 6 describes the conclusions and recommendations.
- Appendix A lists the interviewees and contributors to the report.
- Appendix B details the research sources.

1.4 Acknowledgements

1.4.1 Many people provided time and information to support this study. The authors are very grateful for this support, without which the report would not have been possible.

2 The Context for the Work

2.1 Introduction

2.1.1 This section describes the overall context in which this work took place. It highlights the current, critical role of the National Programme and also looks at the increasing requirement for HI skills in the NHS. In addition, this section clarifies the distinction between management and leadership and provides an overview of current and relevant training schemes. Finally, this section provides a brief account of the history of HI development in the NHS and looks at current workforce data.

2.2 Connecting for Health

2.2.1 The National Programme for IT (NPfIT) is a multi-billion pound investment programme being delivered by the NHS Connecting for Health (CfH) agency. The Government has set aside £2.3 billion over the next three years to pay for the cost of buying and implementing new clinical information systems and the associated training and education needed to help staff adapt to and fully exploit new ways of working.

2.2.2 NPfIT is implementing projects vital to the NHS modernisation programme and focuses on four key developments, which will make a significant difference to patients and those caring for them:

- An electronic integrated NHS Care Records Service (NCRS), including a nationally accessible core data repository and digital images.
- The provision of facilities to support Access, Booking and Choice.
- The electronic transmission of prescriptions.
- A robust underpinning IT infrastructure with sufficient connectivity and broadband capacity to support modernised health and social care, including a national approach to authentication, security and confidentiality and E-Mail and Directory Services (EMDS).

2.2.3 NPfIT is the latest and by far the most high profile national strategy for the updating and implementation of modern clinical information systems and technical infrastructure within the NHS. NPfIT has certainly highlighted the requirement for HI skills but this requirement is already well documented, as illustrated in the following section.

2.3 The Requirement for Health Informatics Skills

2.3.1 The need to develop the HI workforce was explicitly recognised in the publication of Making Information Count: A Human Resources Strategy for Health Informatics Professionals (October 2002). This strategy defines Health Informatics as “The knowledge, skills and tools which enable information to be collected, managed, shared and used to support the delivery of healthcare and to promote health”.¹

2.3.2 The strategy lists a number of underpinning values including:

¹ Making Information Count, Section 2.1, page 3.

- That training and development in HI skills and knowledge does contribute to the effectiveness of the NHS workforce to utilise the investment in new information technology to directly benefit the delivery of patient care.
- That recruitment and career development of a specialist Health Informatics workforce in line with the emerging health professional framework for the NHS will enable them to make the best possible contribution, individually and collectively to improve patient care.

2.3.3 Making Information Count also identified the staff groups who worked within the merging discipline of HI. These groups are:-

- Information and Communications Technology (ICT) staff.
- Health Records staff.
- Knowledge management staff.
- Information management staff.
- HI senior managers and directors of service.
- Clinical informatics staff.

2.3.4 The strategy identified the dearth of workforce data in the HI area and recognised issues around staff recruitment, retention and morale. However, in the course of our research, stakeholders have commented that the strategy lacked an effective delivery vehicle and the subsequent implementation of the strategy has suffered accordingly. It is perceived that progress towards some of the goals of Making Information Count has been slow and the implementation has lacked conviction.

2.4 Leadership and Management

2.4.1 It is necessary to the project to make the distinction between “leadership” and “management”. The first reason is because the project is initially focussing specifically on the development on leadership skills and the second is that the two words are sometimes used interchangeably and this work needs a clear distinction to be made.

The Difference between Management and Leadership Basic Definitions:

- ‘management’ “...the process of getting things done through the agency of a community”².

2.4.2 The management job therefore has two general functions - ‘deciding’ what needs to be done’ and getting it done through people. Managerial activities cluster around achieving purpose e.g. setting objectives, planning, decision-making and organisation, and organising people e.g. motivation, communication, control and development.³

2.4.3 Leadership jobs and leaders are not homogenous. There are three variables - the person, the job and the organisational context. The way an individual undertakes their role, employing leadership behaviours, is a consequence of these. That is:-

² Sir Charles Renold. 'The Nature of Management'. British Institute of Management. London, 1949.

³ Rosemary Stuart. 'The Reality of Management'. Pan Business Books 1993.

- Their personality type, experience and learning.
- The nature of the particular job and the specific demands and expectations surrounding it.
- The cultural 'messages' inherent in the particular organisational context in which the job is located. What does experience of working in the organisation say are the really important things and the way of behaving that is really acceptable, as against what is stated?

2.4.4 This situational model provides a basis for understanding and developing managers or leaders. A person can be successful in one context but fail in another; they may move jobs in the same organisation and find success in that new job where previously they had been struggling. A new manager replacing the old unsuccessful one in the same job in the same organisation may be very successful, or vice versa.

2.4.5 A key skill is that of reading the situation accurately and adapting behaviours to fit. Having read their situation accurately an effective leader must then be able to assess their own skills in relation to the needs of the situation – do they have the required skills or do they need to develop key aspects of their own skill base, or to compensate by using others in their team?⁴

2.4.6 Management (transactional) is about coping with complexity. Without good management, complex organisations tend to become chaotic in ways that threaten their existence and good management brings a degree of order and consistency. Leadership (transformational) is about coping with change. Change is ever more necessary to survive effectively in the current and future environment and more change always demands more leadership.⁵

2.4.7 Management is about 'helping to make happen what is supposed to happen anyway'; leadership is about 'making happen what isn't going to happen anyway'. Personally operating outside your comfort zone - being changed yourself, not just changing others; being a microcosm/ exemplar of the organisational change you are leading. The leader maintains the tension level until followers become convinced they are going to have to make something happen. They then become 'guerrilla leaders' in the change campaign.⁶

2.5 Current Training and Education Delivery in Health Informatics

2.5.1 There are already a number of training and development opportunities for HI staff. These are described in detail below.

2.5.2 The European Computer Driving Licence (ECDL) was adopted as the reference standard for basic IT skills in the NHS in England in 2001. The (ECDL) is the internationally

⁴ Flanagan & Spurgeon, 1996 'Managerial Effectiveness in the Public Sector', OUP, Buckingham

⁵ Kotter, J. (1990) A Force for Change. Free Press

⁶ Richard Pascale 1997 - Dinosaurs to Butterflies: Changing the Way we Change, conference address, Belfast.

recognised qualification which enables people to demonstrate their competence in computer skills. The ECDL is the fastest growing IT user qualification in over 125 countries. ECDL is designed specifically for those who wish to gain a benchmark qualification in computing to enable them to develop their IT skills and enhance their career prospects. No prior knowledge of IT or computer skills is needed to study ECDL.

- 2.5.3 The ECDL syllabus is designed to cover the key concepts of computing, its practical applications and their use in the workplace and society. It is broken down into seven modules, each of which must be passed before an ECDL certificate is awarded. Once a candidate is registered at an accredited Test Centre, a logbook listing all 7 modules is issued. The modules may be taken in any order and over any period of time up to three years - even all at once - offering maximum flexibility. When all 7 modules have been successfully passed, the logbook is exchanged for a certificate and ECDL 'licence' card.
- 2.5.4 The seven modules that make up the ECDL are:
- Basic concepts of IT.
 - Using the computer and managing files.
 - Word processing.
 - Spreadsheets.
 - Database.
 - Presentation.
 - Information and Communication.
- 2.5.5 Benefits of taking ECDL include:
- Raise the level of competency in IT and computing skills.
 - Improves productivity at home and work.
 - Requires no prior knowledge of IT or computer skills.
 - Provides you with a worldwide recognised qualification.
- 2.5.6 The British Computer Society (BCS) manages and promotes the ECDL in the UK on behalf of the ECDL Foundation.
- 2.5.7 The Health and Social Care Modern Apprenticeship (MA) combines work-based training and education for young people, providing an alternative route into a career in health and social care sector. The MA initiative is part of the government's drive to raise standards, reduce social exclusion and address future skills shortages. The programme offers work-based training and development for young people between 16 and 24 years of age. MAs combine a National Vocational Qualification (NVQ) with key skills, a technical certificate and a component covering employment responsibilities and rights.
- 2.5.8 The MA programme is managed by the Learning and Skills Council (LSC) in conjunction with the body responsible for qualifications in the sector. In health and social care this role is fulfilled jointly by Skills for Health (formerly Healthwork UK) and the Training Organisation for the Personal Social Services (TOPSS). Although there is no set time, apprentices normally spend about two years in the programme. Whilst

funding is a significant benefit to employers, benefits to apprentices include developing into well-rounded employees by means of a structured coherent approach.

- 2.5.9 MAs are also one of the top priorities in the Department of Health's "Making Information Count" strategy. A skills gap at NVQ level 3 (Advanced Modern Apprenticeships) has been identified and it is planned to recruit 100 apprentices in Health Informatics by December 2006 following consultation with ETD leads at cluster level. There is not a NVQ level 3 in Health Informatics currently so apprentices are following the IT NVQ level 3. A NVQ level 3 in Health Informatics is planned to be developed over the next 12 months. Three or four SHAs will be recruited to act as pilots with up to 20 apprentices in each area, which should develop three models and identify best practice. The next stage will be to recruit to the 100 and promote and rollout this HI NVQ and the final stage will be to embed it into mainstream.
- 2.5.10 The Professional Awards in IM&T (Health) describe themselves as "A dramatic move forward in improving service quality or effectiveness requires a radical improvement in the quality of information available to – and intelligently used by – the public, patients, clinicians and manager." Information for Health: An Information Strategy for the Modern NHS 1998-2005. Education and Training guidelines EL(97)58 set out, for the first time, specific responsibilities to contract for improved IM&T capability. The HR Framework 'Working Together' relies on improved competency in people and systems to deliver the strategic HR targets. The Professional Awards in IM&T (Health) are a key element in achieving the long-term goal of making IM&T part of professional education, in-service training, continuing professional development and lifelong learning. All of the Awards are underpinned by suites of standards or learning outcomes.
- 2.5.11 The NHS specific standards that underpin the Professional Awards in IM&T (Health) can contribute substantially to the development of local information management strategies; they act as a common language; can be used in job profiling; can be used positively as an organisational, personal and career development tool. Awards available are Advanced Diploma; Diploma; Certificate, all underpinned by suites of standards. 221 Professional Awards students have been recently awarded for their achievements.
- 2.5.12 The Department for Education and Skills have a Skills Strategy called 'Getting on in Business: Getting on at Work', which was updated in March 2005. This document established the Sector Skills Councils (SSC) in place of national training organisations. One of which is specific to health called the Skills for Health Sector Skills Council. The Health Informatics national occupational standards 'belong' to the Skills for Health SSC. There are one hundred and twenty seven standards, which describe the knowledge, skill and performance criteria of all functions from all six staff groups undertaken in Health Informatics.
- 2.5.13 Skills for Health provides the health sector lead and interface with the new Sector Skills Development Agency as the proposed Sector Skills Council (SSC) for health; and takes a UK-wide lead for the development and use of integrated competency frameworks across healthcare.
- 2.5.14 The NHS Leadership Qualities Framework (The Framework) is the preferred framework of the Leadership Centre and was launched in October 2002 by Nigel Crisp. The Framework is evidence based; being grounded in research with 150 NHS Chief

Executives and Directors of all disciplines. The Framework sets the standard for outstanding leadership in the NHS.

- 2.5.15 There are fifteen qualities within The Framework, arranged in 3 clusters – Personal Qualities, Setting Direction and Delivering the Service, covering a range of personal, cognitive, and social qualities. These are defined at levels which identify both effective and outstanding leaders and is shown diagrammatically in Figure 1. The Framework describes a set of key characteristics, attitudes and behaviours that leaders in the NHS should aspire to delivering the NHS Plan. There are opportunities to use The Framework both on an individual basis or within the wider organisational context.

Figure 1 - The NHS Leadership Qualities Framework



- 2.5.16 There are a number of Health Informatics courses and related courses at postgraduate level and a few Health Informatics foundation degrees. A foundation degree (FD) is a two-year vocational degree. The Department for Education and skills see the FD in playing a vital role in widening the base of higher level technical skills and in delivering the Prime Minister's target of a 50% Higher Education participation rate for 18 to 30 year olds in England.
- 2.5.17 The MSc degree is normally 2-year part-time modular taught programmes plus an individual project. These programmes are aimed at graduates or those with relevant experience who wish to maximise their potential within the computing information management area. Some of the courses such as the more specialised MSc in Strategic Information Technology Management (Health) course at Wolverhampton University have been designed to meet the requirements for the NHS Professional Award in IM&T in Healthcare at Vocational Level 5. Table 1 highlights the total number of courses available by geographical area.

Table 1 – Higher Education Courses Available for Health Informatics Staff

Geographic areas are aligned with SHA and WDC boundaries.	Total	M Sc / M Sc Econ	MA	Post Grad Cert/Diploma	Undergraduate B Sc / Min f	Foundation Degree	Establishment/Awarded by	Course Title	IM & T accredited
England									
Avon, Gloucestershire & Wiltshire	0								
Bedfordshire & Herefordshire	0								
Birmingham & The Black Country	1	1		Available			University of Wolverhampton	Strategic Information Technology Management	Yes
Cheshire & Merseyside	1					1	University College Chester	Health Informatics	No
County Durham & Tees Valley	1	1		Available			University of Sunderland	Health Information Management	Yes
Coventry, Warwickshire & Worcestershire	1	1							
Cumbria & Lancashire	2	1				1	University of Central Lancashire	Health Informatics	Yes
Devon & Cornwall	0								
Dorset & Somerset	0								
Essex	0								
Greater Manchester	1	1		Available			University of Manchester	Health Informatics	No
Hampshire & Isle of Wight	1	1		Available			University of Winchester	Health Informatics	Yes
Kent & Medway	0								
Leicestershire, Northamptonshire & Rutland	0								
Norfolk, Suffolk & Cambridgeshire	0								
North Central London	3	2		Available	1		City University London / University College London / University of Westminster	Health Informatics / Health Informatics / Healthcare Informatics	Yes / No / Yes
North East London	0			Available	1				
North West London	0								
North Yorkshire, East Yorkshire & North Lincolnshire	0								
Northumberland & Tyne & Wear	0								
Shropshire & Staffordshire	1				1		Staffordshire University	Computer Science:Biometrics	
South East London	0								
South Yorkshire	2	2		Available			Sheffield Hallam University / University of Sheffield	Bioinformatics / Information policy, technology and management	No
Surrey & Sussex	1		1	Available			University of Brighton	Health Informatics	
Thames Valley	0								
Trent	1			Available	1		University of Derby	Information Management and Technology (IM & T) in Health and Community Care	Yes
West Yorkshire	2				2		University of Bradford / University of Leeds	Medical Cybernetics / Informatics	No
Total	18	10	1	0	6	2			
Northern Ireland	1	1		Available			University of Ulster	Informatics	No
Scotland	3	2		1			Royal College of Surgeons Edinburgh and University of Bath / University of Aberdeen / University of Dundee	Healthcare Informatics and CPD Courses / Health Economics / Primary Care	No
Wales	1	1		Available			University of Wales - Aberystwyth	Health Information Management	No

- 2.5.18 There are also a number of Leadership development courses available, for example, the King's Fund Senior Manager Programme (SMP). This is specifically designed for senior managers and professionals within the NHS, local government and other public and private sector organisations with a strong interest in health and social care. The modular design of SMP provides five weeks of learning spread over several months and is delivered in a variety of settings.
- 2.5.19 In addition, there a number of seminars and short courses being offered by various academic organisations which cover various aspects of leadership.
- 2.5.20 The majority of stakeholders interviewed identified a number of opportunities available to them as listed above but expressed concern about the following:
- Information on courses is not readily available or indeed from one single source. It seems to depend on the individual's enthusiasm and motivation to search out the opportunities available to them. When information is found, this is often lacking in terms of its completeness or accessibility in terms of the level of commitment required from the student or its geographical location. This is echoed from the research we have performed. There is no single website that lists all the course information. The table in figure 3 has been compiled from a number of sources.
 - Junior informatics staff and low-to middle level managers often cited cost and the inability to release staff to attend development and training opportunities. As courses often do not carry professional recognition, there is no perceived benefit to the organisation of these people gaining these qualifications. Training budgets are often the first budgets to suffer when financial pressures are present, which leads to a lack of financial support. In addition, absence from work for training purposes may sometimes create a backlog of work for the individual and provides a disincentive to undertake training in the first place.
 - There is no structured career development pathway for HI staff. People tend to develop within their role, often taking on additional work and accumulating new skill sets with little recognition. Promotion appears to be driven from vacancies arising at the higher grades, creating a ripple effect of promotion leaving the training grade to be recruited into.
 - Very few people could describe or see the link between the different organisations or departments that offer development opportunities. People could not identify one point of contact for advice or information at an enquiry level. There is, therefore, a real danger that this enthusiasm and commitment is not being harnessed within the service.

2.6 Health Informatics and Professionalism

- 2.6.1 A number of groups have been established over a considerable period of time. This section of the report provides a brief background to some of those groups and to the latest developments in the efforts to establish a profession of HI.
- 2.6.2 In 1992 Lord Benson defined a professional body as having the following characteristics:-
- Controlled by a governing body that directs behaviour.
 - Sets entry standards and professional competence.
 - Sets ethical rules and professional standards.

- The body is designed for the benefit of the public and not its members.
- Work is often reserved by statute.
- Ensures fair and open competition.
- Members must be independent in thought and outlook.
- Gives leadership in a field of learning.

2.6.3 The most prominent groups currently are, in alphabetical order:-

- ASSIST – the Association of ICT Professionals in Health and Social Care.
- BCS HIF – the British Computer Society Health Informatics Forum.
- BMIS – British Medical Informatics Society (now under a new name)
- IHRIM – the Institute of Health Record and Information Management.
- PACC – the Professional Association of Clinical Coders.
- UK CHIP – the United Kingdom Council for Health Informatics Professions.

2.6.4 ASSIST is in the process of forming closer links with the BCS HIF.

2.6.5 ASSIST, IHRIM and PACC are specific to the NHS with ASSIST probably having the more diverse membership. All three groups aim to improve the profile and status of their core constituency groups.

2.6.6 The BCS is the leading professional and learned society in the field of computers and information systems and the newly formed HIF is the Health Informatics division of the BCS.

2.6.7 The NHS Information Authority also had a mandate to establish the Health Informatics profession. In 2002 the first conference was convened.

2.6.8 UK CHIP was established in 2003 with the specific aim of becoming the regulatory body for the new profession of Health Informatics. It is supported by the other groups listed above. It is not a membership organisation, like the others, but people may apply for registration with UK CHIP if they qualify for one of three levels of registration. The aim of UK CHIP is to introduce mandatory registration and regulation within the next few years.

2.6.9 All of the above groups aspire, to a greater or lesser extent, to become part of a professional body. UK CHIP may become the vehicle through which such aspirations could be achieved. However, as other professions - such as Finance, as represented through the Healthcare Finance Managers Association (HFMA) and Medical Physics, as represented through the Institute of Physics and Engineering in Medicine (IPEM) – in the NHS can testify, the achievement of professional status is a lengthy process.

2.6.10 The above groups do demonstrate the desire for professional status but none of the groups would fully comply with the characteristics outlined by Lord Benson in 1992. One of the current weaknesses is the plethora and diversity of existing groups – there is no equivalent to the HFMA, there is no Health Informatics Managers Association (HIMA). Another weakness is the absence of a widely accepted and well-regarded mandatory regulation and accreditation process, together with the absence of mandatory Continuing Professional Development schemes, although these are among the stated aims of UK CHIP.

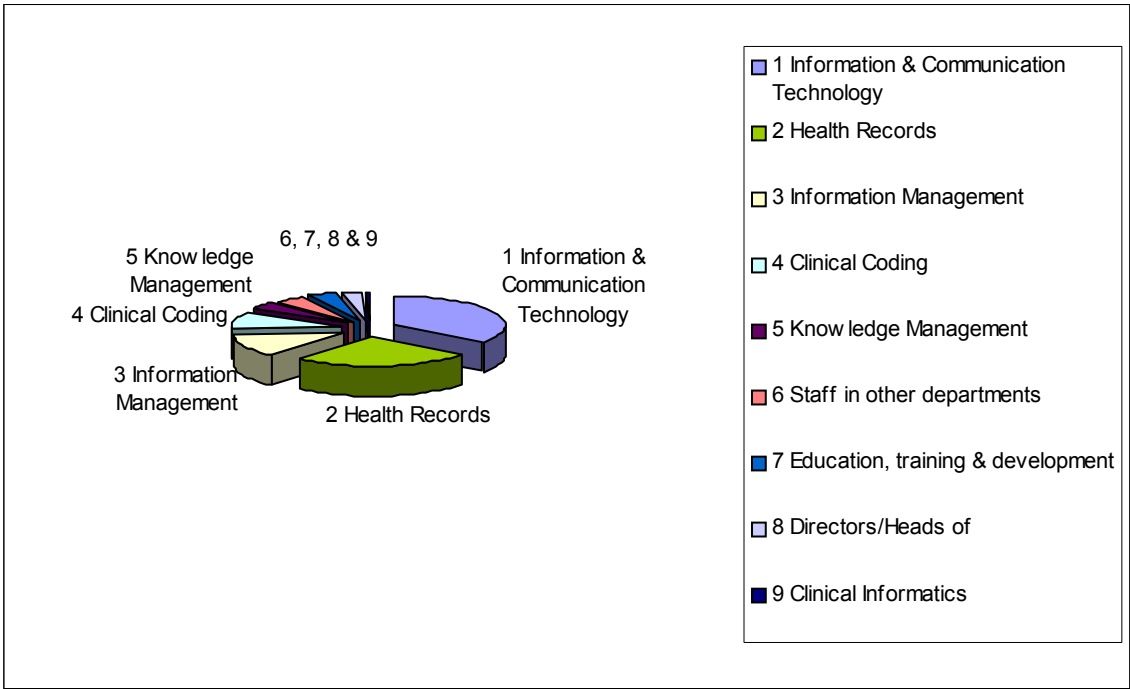
2.6.11 The absence of these essential features of a professional body amongst HI in the NHS is relevant to the leadership requirements of HI and will be returned to later in this paper.

2.7 Workforce Data

2.7.1 It was originally intended to provide an up-to-date analysis of the HI workforce, including current trends in recruitment. However, our research has shown that there is no up-to-date information or current data available on the HI workforce. Each of the professional groups such as ASSIST has their own membership records but these cannot be used to estimate the entire service workforce in HI as membership is not compulsory. There is some data/information at cluster level however this too cannot be used as what is collected is not consistent from cluster to cluster. What is available is taken from the Department of Health’s “Making Information Count” strategy.

2.7.2 This data shows HI staff numbers as reported over three years ago. The total number of Health Informatics staff in the NHS as at October 2002 was estimated at 20, 271⁷.

Figure 2 and Table 2 – Number and Category of HI Staff



⁷ Department of Health, Making Information Count: A Human Resources Strategy for Health Informatics Professionals, October 2002

Staff Groups	Estimated No. and Percentage of Staff
Information & Communication Technology	7140 (35%)
Health Records	5300 (26%)
Information Management	2595 (13%)
Clinical Coding	1890 (9%)
Knowledge Management	913 (5%)
Staff in other departments	870 (4%)
Education, training & development	840 (4%)
Directors/Heads of	600 (3%)
Clinical Informatics	123 (1%)
Total	20271

2.7.3

The largest staff group by far is the ICT group, which accounts for 35% of the HI staff workforce, which is followed by Health Records (26%), Information Management (13%) and Clinical Coding (9%). The remaining 17% is made up of staff in other departments, education, training and development, directors and heads and clinical informatics.

3 Project Approach

3.1 Introduction

3.1.1 This section outlines the approach adopted in this research. It explains the aims and objectives of the project, the scope, research framework and methodology, as well as identifying the key stakeholder groups.

3.2 Aims and Objectives

3.2.1 The aim of the project is to assess the requirement for a HI Future Leaders Scheme and to identify options for its delivery. Specific objectives are to:

- Assess the requirement for a HI Future Leaders Scheme in the NHS and define the size and nature of the requirement.
- Define the core competencies and skills of future HI leaders.
- Identify the options for delivering a HI Future Leaders Scheme to develop future HI leaders.
- Identify the qualifications and experience which would qualify a candidate to undertake training to become a future HI leader.
- Learn from existing NHS graduate and leadership training schemes to inform the development of a HI Future Leaders Scheme and to provide an outline of the resource requirements.

3.3 Scope

3.3.1 The primary aim of this project is to collect evidence to assess whether there is a need for a HI Future Leaders Scheme and, if so, what form this should take. The underlying aspiration of this work is to increase the quantity and quality of HI leaders within the NHS. This is a broad aim and could be addressed by a diverse set of approaches, for example commissioning Universities to develop and deliver postgraduate courses or recruiting HI experts from outside the NHS.

3.3.2 This project will focus specifically on developing and training graduates, or equivalent, from within the NHS or outside, to become the HI leaders of the future, through a HI Future Leaders Scheme. It assumes graduates will be expected to have a degree and/or experience relevant to becoming a HI leader, although this assumption will be tested as part of the research.

3.4 Research Framework

3.4.1 Table 3 below provides detail of the research questions and the sources of evidence in developing the research.

Table 3 – Requirement and evidence for a HI Future Leaders Scheme

Research Question	Data collection from
Requirement and evidence for a HI Future Leaders Scheme	
Is there a perceived need for a HI Future Leaders Scheme?	All stakeholders
What is the size of the evidence for this and from where/whom?	All stakeholders Review of workforce data
How/why is the creation of scheme important for developing strategic leadership skills in the NHS?	All stakeholders
What are the areas of greatest need for HI graduates and leaders in the NHS?	All stakeholders
Readiness of the NHS for a HI Future Leaders Scheme	
Is there sufficient enthusiasm and drive from managers and key decision makers?	Senior managers, Chief Executives
Is there sufficient interest from potential trainees?	Erasmus University and other students; junior informatics staff in the NHS; ASSIST membership
What are the perceived barriers and incentives?	All stakeholders
Are there existing institutes that could deliver the qualifications based on the new national occupational standards? Which ones, how ready are they, what needs to be done to prepare them?	Existing providers of informatics courses, academic interviewees.
Are local trusts willing and capable of supporting and mentoring students?	Chief Executives and Directors; senior informatics staff
What preparatory work needs to be undertaken by the NHS prior to any scheme being launched and what will be the major costs? (Check by costs we mean very high level ball park figures not detailed breakdowns).	Other schemes within the NHS; other professional bodies; WDD staff
Delivery of a HI Future Leaders Scheme	
What are the core competencies to be developed in trainees? (Again check this is a high level definition, drawing from existing work, not starting from scratch).	People involved in NOS and KSF; people involved in other schemes; senior informatics staff
What will be the entrance requirements? (This is likely to be a matrix of mix/match, but again very high level).	All stakeholders
How will trainees be recruited?	All stakeholders

How will the scheme be delivered, e.g. block release, e-learning, etc?	Academia, senior informatics staff, WDD staff
Where/who should deliver the scheme?	As above
What resources will be required to administer and lead the scheme?	People involved in other schemes, other professional bodies, WDD staff
How/who will accredit and quality assure the scheme?	Key individuals, Professional bodies, WDD staff
How will mentorship be implemented and what will the costs be to the NHS? (Again we mean costs in terms of people's time rather than detailed financial costs).	Chief Executives, senior informatics staff, academia
What can be learnt from existing NHS graduate schemes to inform the delivery of a HI Graduate Leadership Scheme? (Again, this is a high level review not an in-depth evaluation).	People involved in other schemes, Chief Executives, senior informatics staff

3.5 Methodology

3.5.1 Our approach to the research and data gathering stages of this project was to interview as many of the key stakeholders as we could on a face-to-face basis. Many of these occurred on a one to one basis, whilst group sessions and workshops were held with other stakeholders. Where face-to-face contact was not possible, then telephone interviews were conducted or in some cases email correspondence was carried out.

3.5.2 Different parts of the project required different approaches. This mixed approach has provided a robust research methodology and genuine engagement with stakeholders.

3.6 Sample Size

3.6.1 The cohort of stakeholders contacted as part of this work is of sufficient quality and quantity to support robust findings, a good range of people contributed and it was not selective. A total of over 80 people were contacted and 60 people contributed, resulting in 27 face to face interviews, 13 telephone interviews three group/workshop sessions and two sets of email correspondence.

3.6.2 The research phase developed genuine consultation and engagement with key stakeholders and this will be critical to any future business case development.

3.7 Stakeholders

3.7.1 Key stakeholders included Chief Executives, senior NHS Informatics Managers/Directors, the Association of ICT Professionals in Health and Social Care (ASSIST), UK Council for Health Informatics Professionals (UKCHIP), British Computer Society (BCS) Health Informatics Forum, academic providers, Workforce Development Directorates, and potential students of any HI Future Leaders scheme. A full list of interviewees is provided in Appendix A.

4 Requirement and Readiness for a HI Future Leaders Scheme

4.1 Introduction

4.1.1 This section outlines the main findings from the research. This section concentrates upon whether a need for a HI Future Leaders Scheme is identified and if so, whether the NHS is ready for such a development. It also provides information on the reasons for a perceived need as well as details on what the NHS needs to do to prepare for these developments.

4.2 Perceived Need

Is there a need?

4.2.1 The vast majority of stakeholders who were consulted as part of this research project believe that there is a need for leadership development within Health Informatics in the NHS. The precise detail of what is needed and why it is needed do vary considerably and is explained below.

4.2.2 A tiny minority of interviewees stated that leadership development would be wasted as there would be no room at the current Trust Board table for additional Executive Directors.

4.2.3 Most of the key stakeholders who were consulted described a set of generic reasons why it was important for Health Informatics to have a higher profile and to be represented in some way at Board level. Individually, the key stakeholders then went on to describe a wide range of varied developments that were needed in order to achieve the higher profile and Board level representation. Amongst this wide range was leadership development.

4.2.4 The following section of the report describes some of the developments that key stakeholders identified as being required in order for HI to achieve greater prominence in the NHS generally and in individual NHS organisations.

4.3 The Development Prospectus

Meeting the Generic Needs of NHS Policy

4.3.1 According to almost all the stakeholders interviewed, HI is an increasingly important discipline within the NHS. As an important discipline, it will need development and leadership, not just management. However, not one of the interviewees said that a Health Informatics Leadership Scheme alone would be sufficient in addressing the needs of this embryonic profession.

4.3.2 A number of stakeholders talked about the need for a package of measures, of a “development prospectus” and multi-strand approach that would have something for all existing HI staff and would make clearer to potential future HI staff, what a career in HI might look and feel like.

4.3.3 It was widely recognised that not all staff in any discipline aspire to leadership roles. All staff, at whatever level, should know what is expected of them and be clear about

the standards and competencies with which they must comply. These standards and competencies are less well established in HI than in most other NHS disciplines such as doctors, nurses, finance and HR.

- 4.3.4 It is because HI is relatively immature and unstable or dynamic, that these standards and competencies are less established and less clear. A point made by many stakeholders was that HI, although still embryonic, is nevertheless a very complex area and this is one of the reasons why it has struggled to become an established profession and why it has not readily found a seat at the Trust Board table.
- 4.3.5 An overwhelming theme from the interviews was that Government health policy, the NHS Modernisation Plan and the National Programme for IT all demand better quality information and better quality (more robust, reliable and effective) computerised information systems.
- 4.3.6 This can be seen most clearly in the need for improvements in:-
- Data quality to support Payment by Results.
 - Technical infrastructure to support the electronic transfer of prescriptions and access to electronic care records, as well as digitised medical images.
 - Information analysis and modelling to support Practice Based Commissioning.
 - Information analysis and provision to support access, booking and choice.
 - Web-based information to support Choice.
 - Information and knowledge management to support clinical decisions.
 - Information interpretation to support strategy development and competitive advantage.
- 4.3.7 All of the above were mentioned by several key stakeholders.
- 4.3.8 Another reason for the need to enhance the profile of HI and another theme that emerged from a significant number of key stakeholders was that of risk management.
- 4.3.9 Whilst the controls assurance framework is well known to all NHS organisations, the critical role of HI and IT systems in many risk areas is not yet sufficiently highlighted, according to many of the people who contributed to this research.
- 4.3.10 The most common examples quoted were the:-
- Clinical Negligence Scheme for Trusts (CNST).
 - Risk Pooling Scheme for Trusts (RPST).
 - Management of key national targets such as outpatient and inpatient waiting times.
 - Information Governance agenda including such issues as security, confidentiality, appropriate management of Internet access, business continuity and disaster recovery.
- 4.3.11 It is clear from the above that many national policy areas demand better information and improved information systems. What is still not clear to many but a factor mentioned by a number of key stakeholders, is that IT systems and information are already playing and will continue to play an increasingly vital role at the clinical interface.

- 4.3.12 As clinical systems become more comprehensive and pervasive, as an increasing amount of clinical history is retained solely in electronic format, and as bio-medical and pharmaceutical developments proliferate, so the reliance on up-to-date and accurate information, together with reliable systems and infrastructure, will become even more essential to the patient/clinician encounter.

Developing a Competent, Professional Body of Staff

- 4.3.13 Our research shows that to meet the demands outlined above, a professional and competent cohort of staff will be needed. Opinion was split as to where attention should best be focused; whilst some stakeholders argued that information analysis and interpretation was in most need of strengthening, others argued for development of new, service oriented skills, whilst others put the case for generic leadership development.
- 4.3.14 The majority of stakeholders were in agreement that the HI discipline within the NHS needed strengthening with the features of more established professions. This would include:-
- A clear career structure delineated by qualifications and agreed competencies.
 - A nationally agreed set of competencies which were aligned with industry standards.
 - Alignment with E-Government policy and the developments with the office of the Government's Chief Information Officer and Head of E-Government.
 - Mandatory registration of HI staff.
 - Regulation of staff practising as HI professionals.
 - Accreditation of HI qualifications and competencies.
 - Mandatory Continuing Professional Development with periodic review.
- 4.3.15 As might be expected, the strongest views in this area came from professional bodies such as ASSIST and UK CHIP. It was felt that the Department of Health and the NHS CfH in particular could do far more to promote and facilitate these developments and that NHS CfH should not directly be involved in, for example, establishing competencies, provision of training courses or in regulation as these were all available elsewhere.
- 4.3.16 There was not widespread knowledge about recent developments in this area. It was recognised by many interviewees but not a majority, that the recently developed National Occupational Standards (NOS) were a useful step forward but the ownership, status and development of the Standards is not well known. The mapping of the NOS to the Knowledge and Skills Framework is considered as an adjunct to the implementation of Agenda for Change (AfC) and this, AfC, is not highly regarded as most of the informatics staff amongst our interviewees felt that they had not been treated fairly under AfC.
- 4.3.17 Finally, the efforts to align the NOS and the KSF with the Skills for the Information Age (SFIA) framework were welcomed by some but SFIA was not considered relevant for all branches of HI.
- 4.3.18 The majority of key stakeholders had heard of the IM & T Awards but were not clear on their status. It was also felt by some that the Awards were not recognised fully and

contributed little to the need for widely accepted career qualifications. This is further supported as Dennis Protti has recently reviewed the IM&T Awards and one of the findings was that there had been a lack of communication and marketing.

- 4.3.19 Very few interviewees knew anything about relevant Apprenticeship Schemes and/or Foundation Degrees. There is a clear need to market these developments and to review the need for such developments. Caution should be heeded with regard to marketing at cluster level as organisations may be missed. The NHS CfH do not currently have access to mailing lists so it has to use a tiered approach, however there are discussions about having 1-2 NHS CfH education, training and development (ETD) leads at cluster level to help with the networks.
- 4.3.20 Overall, those stakeholders that were knowledgeable in this area felt that the situation was confused with a plethora of initiatives and developments but little that would help to raise the profile of HI. In order to achieve an increased profile and a more robust career framework, it would be necessary to map the 127 Occupational Standards to key delivery areas and for levels of competency in these delivery areas to be strongly linked to levels of mandatory professional registration.
- 4.3.21 The mapping of the NOS to the KSF is happening as part of the AfC implementation. The opportunity should be taken, according to some of the key stakeholders, to link these mappings to levels of registration and then mandate registration and strongly encourage membership of an appropriate professional body.
- 4.3.22 In addition, the current proposal for a National Professional Development Board would ensure the establishment and ownership of professional standards and a framework for nationally agreed Continuing Professional Development which could then be mandated also.
- 4.3.23 If the above were achieved it could:-
- Provide guidance to Chief Executives on the fitness to practice of their HI staff.
 - Reassure clinicians and managers that HI staff operated within a professional regime and to nationally defined standards of competence and behaviour.
 - Reassure patients that their information and systems supporting their care were in the hands of a regulated profession.

Developing HI Leaders

- 4.3.24 A minority of key stakeholders did not go beyond those measures outlined above in stating what was needed to strengthen HI in the NHS. However, a large majority of interviewees identified a further set of developments that were needed. Some of these developments were needed throughout the body of HI staff, whilst others would be needed just for those staff that aspired to leadership roles.
- 4.3.25 Without exception, everyone to whom we spoke recognised the need for a set of core competencies to operate effectively in the HI discipline. However, it was also recognised that there is an increased flow of people between the private and the public sectors and that this might introduce additional needs. This blurring of the boundaries between public and private sector was seen as a positive change in that a more rounded set of personal competencies should result.

- 4.3.26 In addition to the core competencies which needed to be more clearly marketed and adhered to by NHS organisations, for the body of HI staff, it was felt that the following were development needs:-
- Communication skills.
 - Information interpretation skills.
 - Understanding the business of the NHS and their role within it.
- 4.3.27 For those HI staff aspiring to leadership roles, it was felt that in addition to the above, other skill sets would be needed. These were identified as:-
- Even better communication and “translation” skills – being able to condense highly technical issues into meaningful reports.
 - Business and service-oriented skills – being able to see the way that HI contributed to an organisation’s Business Plan and recognising that HI was providing a service to customers – managers, clinicians and patients – and understanding what was meant by running a service.
 - Political skills – understanding the organisation of the NHS and of individual organisations; knowing the champions, the luddites, the influencers and managing the relationships appropriately.
 - Influencing skills – a combination of the above with the added ability to talk persuasively in support of business cases and to develop a “can-do” approach whilst critically challenging proposals. This has been a key skill requirement for a number of years.
 - Strategic vision – the ability to see how emerging technology and other HI developments should be adopted and deployed for the benefit of the organisation, as well as recognising the change required in order to implement successfully.
- 4.3.28 For the vast majority of key stakeholders, the above set of skills was generic to leadership development and needed little refinement for HI specialists. It was also recognised that the development needs could be met in a variety of ways.
- 4.3.29 One key stakeholder grouped all of the above into the acronym YES –
- You and how you behave
 - Effectiveness in getting things done, and
 - Style – how you got things done.
- 4.3.30 In addition to the above needs, a number of key stakeholders wanted to discuss the role of Chief Information Officer. These stakeholders felt that the CIO role needed better definition within NHS organisations. In addition to the above leadership skills, it was felt that the CIO needed strength in programme management and managing external contracts.
- 4.3.31 One interviewee stated that the CIO role was now needed more within individual NHS organisations, where there were very few, and less in Strategic Health Authorities, all of whom had at least one post identified as the CIO. This would be increasingly the case as the National Programme gathered momentum.

- 4.3.32 A CIO development programme was documented in a Secta report⁸ commissioned by the Department of Health and delivered in February 2003. This clearly identified a set of core competencies and a programme through which these competencies could be developed or strengthened.
- 4.3.33 The minority of stakeholders who felt that the CIO role needed clarifying believed that greater consistency in the role was needed throughout the NHS and that a greater contribution to the development of HI as a discipline within the NHS could be made from effective CIOs.
- 4.3.34 A similar minority of stakeholders argued strongly for better role models for HI staff within the NHS. However, it was recognised that better role models would come from better leaders and that better leaders would be developed based upon the discipline attaining a higher and more valued profile, as well as some of the trappings of a profession, such as registration and regulation.
- 4.3.35 One key stakeholder compared HI with the Finance profession and remarked upon the explicit contribution and support of the NHS' Director of Finance and Investment and the Deputy Director of Finance in staff development within their profession. Similar contributions were not visible in the HI discipline and this lack of "champions" for professional staff development was an area in need of attention.

4.4 Readiness

- 4.4.1 This section of the paper builds on the previous section to describe why it appears that the NHS is not ready for some of the developments outlined above. It details the symptoms of the lack of readiness and outlines some of the steps that stakeholders felt do need to be taken.
- 4.4.2 This area has proved very difficult to achieve clarity or commitment. The reasons for this are that the key stakeholders do not know what is being proposed. They may have identified a need and they may have views about how the need should be addressed and what preparatory work is needed. However, with some notable exceptions, very few stakeholders or the organisations to which they belong, have done anything at a local level to address these needs as many are seen as national issues. This would change once an effective national approach was in evidence.
- 4.4.3 Without exception, all key stakeholders asserted that the NHS was not ready for some of the developments outlined in section 4.3. There was no consensus from the research of what were the most important steps that should be taken to achieve readiness. There were a number of areas that were highlighted as demonstrating a lack of readiness and another set of steps that were needed to improve the situation.
- 4.4.4 Amongst key stakeholders there is plenty of enthusiasm and willingness to help the NHS prepare for some of the developments needed in terms of HI. However, many stakeholders referred to the negative perceptions of HI and that a multi-strand approach (see above in section 4.3.2) was needed, co-ordinated at a national level, to overcome and combat this perception.

⁸ Draft Final Report, CIO Development Programme, February 2003.

- 4.4.5 At its worst, the perceptions were described as follows:-
- Failed IT projects – unable to deliver projects to scale or to budget and never producing savings or real benefits.
 - HI staff unable to communicate effectively, speaking in techno-babble and unable to relate to the real exigencies of the NHS.
 - A ‘cannot do’ culture, always saying no.
 - Lack of customer focus, not service oriented.
 - Too obsessed with 100% accuracy of data and completion of central returns with too little attention to “good enough” information, in a timely fashion, needed for the business; poor information interpretation and development of corporate intelligence.
 - Little understanding of the wider aspects of the NHS and so little to contribute to strategic thinking and business development.
 - Lack of professional behaviour and, therefore, professional status not warranted.
- 4.4.6 As with most generalisations, the above perceptions bear only a passing resemblance to reality. Also in line with most generalisations and prejudices, there is an element of self-fulfilment in this (if someone is treated with little respect and not afforded professional status and generally housed in poor accommodation, they will act according to that perception), as well as an element of fear from those outside the HI discipline at the lack of understanding of the real issues.
- 4.4.7 Regardless of the accuracy of the perceptions, they need to be addressed and the development of professional bodies such as ASSIST, IHRIM and PACC provides some means of changing these perceptions.
- 4.4.8 The steps identified by the stakeholders whom we interviewed as required to increase the readiness of the NHS are listed below:-
- Develop champions for the HI profession at the top of the NHS.
 - Develop more role models throughout the NHS.
 - Provide explicit national impetus towards professionalisation of the HI discipline and, together with appropriate professional groups, set a challenging timescale for mandatory registration and regulation.
 - Refine and re-define the CIO role and ensure they have local responsibility for professional development of HI staff.
 - Encourage and support CEO champions – see section 4.4.9 below.
 - Change the NHS CfH and Health and Social Care Information Centre roles to more facilitative and supporting rather than “doing” and increase support to other bodies to develop the professional infrastructure.
 - Expose the dearth of workforce planning and explain the need to develop better workforce planning and progress this through Workforce Development Directorates.
 - Develop nationally supported campaigns to market the increased importance of HI with the aim of increasing awareness amongst the CEO and Trust Board communities.

- Champion local schemes like the Informatics Master Class Series in West Yorkshire.
- Ensure senior and aspiring HI staff are represented on management development programmes.
- To summarise the above points by not reinventing the wheel and to build upon activities and schemes that already work.

Convincing the Chief Executive

- 4.4.9 All of the above bullet points are important and share some dependencies. The one point that was raised by a majority of stakeholders was the need to convince Chief Executives of the increasing importance of HI and, therefore, the need for HI staff development right through to Board level.
- 4.4.10 In this particular aspect, the contribution of Chief Executives themselves to our fact finding has been invaluable. A number of factors are considered below.
- 4.4.11 Firstly, there are indications that more Chief Executives are realising the importance of information and information systems. This is explained by the:-
- High profile of NPfIT.
 - Clear line of accountability of Chief Executives for the delivery of the contracts with Local Service Providers (LSPs) – whether or not NHS organisations are ready, LSP bills will still have to be paid.
 - Implementation of Payment by Results and its dependency on accurate, reliable and timely information.
 - Need for a reliable computerised systems and technical infrastructure to support normal business processes like e-mail correspondence, waiting list management and public health alerts.
 - Need for better information analysis and interpretation to support Practice Based Commissioning and more robust management of the market for healthcare.
- 4.4.12 Secondly, the connection between better and more reliable HI and the positioning and profile of HI staff within NHS organisations is only just beginning to be made.
- 4.4.13 Thirdly, Chief Executives are increasingly immune to shroud-waving and additions to the list of “hanging offences”; a different approach is required.
- 4.4.14 Fourthly, the investment by the Government in the NHS is due to come to an end by 2008. It is expected that all NHS organisations will break even by this time and even begin to produce a surplus by 2009. Government funding in the NHS may well reduce after this point. Realising the benefits of the investments in information and IT will be one way in which NHS organisations will be able to produce efficiency savings in order to balance the books.
- 4.4.15 Finally, and linked to the previous point, the reform of chronic disease management is gathering pace. There are considerable improvements still to be made which will require a robust technical infrastructure to be in place and the sharing of clinical and management information across care settings and organisational boundaries. Those organisations who invest in HI development will realise these improvements earlier and avoid future cost penalties.

- 4.4.16 The reasons for improving the profile of HI and the staff that deliver it, some of which are listed above, must be a central plank in increasing Board awareness of these issues. All NHS Boards should be fully aware of the rationale for investment in HI staff and should be able to establish performance management frameworks against which HI must deliver.
- 4.4.17 All of the above should form a major component within the marketing and promotion of the National Programme. This will not add significantly to the existing costs of this work.

4.5 Summary

- 4.5.1 Section 4 has described the need for HI development identified in our research and by the key stakeholders who have been consulted. It has clearly identified that a need exists and the different components of that need. The section has further described the lack of readiness of the NHS as perceived by the key stakeholders and outlined ways in which aspects of that lack of readiness can be addressed.
- 4.5.2 Section 5 that follows will describe the options for meeting the needs identified above. It will also outline the feasibility of delivery of these options, including outline costs.

5 Delivery of a HI Future Leaders Scheme

5.1 Introduction

- 5.1.1 This section of the report outlines a range of actions that are needed to develop the HI discipline, including the development of future leaders. The proposed actions are based upon the findings of our research, including interviews with key stakeholders.
- 5.1.2 Previous sections of the report have explained why improvements in Health Informatics are needed and what types of changes are needed in all the different aspects of HI. This section provides further detail on how those desired changes could be implemented.
- 5.1.3 Section 2.5 describes a wide range of currently available training and development programmes. In addition to these schemes, our research and our experience working with HI staff in the NHS indicate that further development is needed. Ideally, the development needs of a group of staff within a defined discipline would be determined by workforce planning. That is, structured surveys and research would identify the present parameters of the workforce – numbers, skills, age profile etc – together with the required workforce profile in, say, five years hence. A modelling exercise would then identify any skills gap or need to adjust the present workforce structure and the required developments would be put in place.
- 5.1.4 Unfortunately, as our research has shown, there is a dearth of workforce data on HI staff in the NHS. The absence of this data needs to be addressed and it is understood that there are some tentative proposals from the BCS HIF and ASSIST to close this information gap.
- 5.1.5 In the absence of workforce data, our recent research is an invaluable source of key stakeholders' views on what developments are required for HI staff. These range of developments are listed in Sections 4.2 and 4.3. Some of these requirements may be addressed by existing training schemes but a more structured and pro-active approach is needed to ensure these schemes are appropriately utilised in staff development.
- 5.1.6 Many of the key stakeholders argued that leadership development is needed and that the need is for generic leadership skills. However, the majority of interviewees also made it clear that leadership development within the domain of healthcare would have added value rather than generic leadership development carried out with no reference to the care environment. In other words, understanding such things as the politics of NHS organisations, together with the way, for example, an outpatient clinic is run, will provide a better framework within which leadership skills could be developed.
- 5.1.7 There are a number of skill or competency areas in need of development or strengthening and these areas are identified in this section with proposals for their delivery.

5.2 Core Competencies

- 5.2.1 Core competencies at all levels of HI are now documented within the National Occupational Standards (NOS), which are mapped to the Knowledge and Skills Framework (KSF). This is good progress as far as it goes. Further work is now needed in order to ensure adherence to and consistent implementation of these

competencies throughout HI. Within the NHS this will form part of the annual development review for all HI staff covered by Agenda for Change. It will also form a key part of Continuing Professional Development (CPD) plans.

- 5.2.2 In addition and in order to ensure effective and timely implementation, achievement levels within the KSF which help to determine salary bands within the implementation of the Agenda for Change policy, must be linked to levels of registration with a professional registration body for HI.
- 5.2.3 This will need to become a mandatory requirement from the Department of Health for all HI staff wishing to continue to practice within health. This will go some way towards reassuring patients and employing organisations that their HI staff are fit to practice.
- 5.2.4 Core competencies for Chief Information Officers in the NHS were documented in the earlier Secta report⁹ and are repeated again here.
- Understanding key NHS business drivers.
 - ICT strategic issues.
 - Change management and process re-engineering.
 - Leadership and influencing.
 - Facilitation.
 - Communication.
 - Programme and project management.
 - Performance management.
 - ICT in healthcare.
 - Business cases.
 - Procurement.
 - Managing contracts and suppliers.
 - Managing people and resources.
 - Healthcare ICT practitioner skills.
 - IT desktop user skills.
- 5.2.5 The above core competencies relate to CIOs in the NHS and do not necessarily equate to core competencies for HI leaders in the NHS. However, as has already been seen (see Section 4.4.8), in order for the NHS to strengthen the HI discipline, developing better role models and champions for HI is essential. It would, therefore, be valuable to re-visit these core competencies when recruiting CIOs within the NHS.
- 5.2.6 It is also worth noting that many of our key stakeholders identified three of the above competencies as being crucial to HI leadership development:-
- Understanding key NHS business drivers.
 - Leadership and influencing.

⁹ Draft Final Report, CIO Development Programme, February 2003.

- Communication.

- 5.2.7 These three key areas are the critical areas in terms of the development of future HI leaders. Other skills in need of strengthening were information interpretation and technology translation.
- 5.2.8 Interpretation of information can only take place if the rest of the information pathway has been robust:
- If the relevant data has been captured.
 - If data quality has been assessed and managed accordingly.
 - If data processing has occurred accurately.
 - If information analysis has taken place correctly and the information is presented accordingly.
- 5.2.9 Critical appraisal techniques are then needed by the information user to confirm that the evidence and intelligence is sufficient to support the decisions that need to be made. There will always be incomplete information and therefore these techniques are needed to assess the likely importance of the missing information and therefore the risk that the decision will be flawed.
- 5.2.10 Technology translation is the identification of new and emerging technologies and recognising how these will be best deployed within the delivery of care and to gain added value and advantage for commissioner and provider organisations.
- 5.2.11 The three critical competencies are also included in the Leadership Qualities Framework (see Section 2.5.17) which is part of the remit of the new Institute for Innovation and Improvement. The potential role of the Institute in developing future HI leaders is described below in Section 5.3.8.

5.3 Options for delivery

- 5.3.1 There are a number of options for delivery, which may be suitable. These could be described as a concept of a development prospectus, which can be published. This could be defined as high level competencies, encouraging the range of options for delivering leaders in terms of a development prospectus.
- 5.3.2 One possible optimum delivery method for the development of key leadership skills could be through a structured programme over the course of up to 12 months with concentrated periods of three to five days. These concentrated periods can be delivered in different settings but should be in groups with colleagues and away from the normal place of work. This could be based on either a national or local scale.
- 5.3.3 HI future leaders could learn through formal, structured seminar programmes as well as by being in a learning environment with HI colleagues. However, some of the key stakeholders that we interviewed argued that HI staff would benefit from more contact with other NHS non-HI staff and with non-NHS informatics staff from other sectors of industry. So a range of programmes in different settings would be the ideal learning programme.
- 5.3.4 Another possible approach could be through the use of mentoring and job shadowing, which could be within the same organisation, across local health communities or based on a wider geographical scale.

- 5.3.5 The requirements of HI future leaders make it likely that a number of organisations could be involved in delivering appropriate schemes. For example, the West Yorkshire Informatics Master Class Series is explicitly supported by the local CIO, financially supported by the West Yorkshire Workforce Development Confederation/Directorate and delivered jointly by the NHS and the Yorkshire Centre for Health Informatics (YCHI). The cost is £150 per participant.
- 5.3.6 YCHI is attached to the University of Leeds and the involvement of academic institutions can improve the structure of the programme, the objectivity and academic rigour.
- 5.3.7 The aims of the YCHI programme are:-
- Widen knowledge through access to leading edge speakers.
 - Facilitate strategic planning across organisational boundaries and the move from organisational to system thinking.
 - Consider and anticipate some of the implications of policy changes for informatics services.
 - Help senior informatics staff bridge the clinical, managerial and technical worlds.
 - Help develop the next generation of informatics leaders.
- 5.3.8 From the key stakeholder interviews, the interview with Professor Bernard Crump as the new Chief Executive for the Institute of Innovation and Improvement was extremely helpful in clarifying the role and priorities of the Institute. At present, the intake for its leadership development programme comes mainly from existing chief executives and Board level directors. It is likely that a leadership development programme for existing HI staff would need to be developed from parts of the existing programme, as well as introducing new modules.
- 5.3.9 Professor Crump indicated that he would welcome more detailed discussions with two of his directors on what could be offered by the Institute once this report had been approved. The current programmes of the Institute are all under review to ensure that they are fit for purpose, so the time is right to develop the thinking of the Institute as regards future HI leaders and their development.
- 5.3.10 In addition to the above, any number of organisations and academic institutions could offer similar programmes of leadership development, however, these would lack the added value of domain knowledge of the care setting.
- 5.3.11 It is apparent from our research that much of the infrastructure required to meet the needs of future HI leaders is already in place. Local schemes with CIO, academic and WDD support are developing; the new Faculty of Health Informatics is already running a series of half-day master classes; the Institute for Innovation and Improvement already deliver programmes very close to the requirements and are keen to review these in the light of the HI requirement; and many other organisations already have programmes aimed at leadership development, some of which are specific to the public sector.
- 5.3.12 The key to successful delivery of leadership development programmes links back to the broader needs to strengthen HI in the NHS. These schemes need to become an integral part of senior management and leadership development in HI in the NHS. This

will require strong endorsement from the top of the NHS, explicit support from the NHS CfH Agency and a higher profile within the sphere of orbit of Chief Executives.

- 5.3.13 In addition to the above, practical resources will be required to develop, maintain, organise and market these programmes. These resources will need to be accessed from the NHS CfH Agency, CIO offices and the Workforce Development Directorates. Input from academic institutions will also be needed.
- 5.3.14 The leadership development schemes for senior HI staff, together with many other forms of training and development for all HI staff, should become one component of Continuing Professional Development. In other established professions like Finance, it is the professional and regulatory body that sets the standards to be achieved. With the tangible and practical support of the NHS CfH Agency, as well as support from the Department of Health, this should be the same for HI.
- 5.3.15 There are ongoing discussions about the formation of a national Professional Development Board with input from all key stakeholders and it would be logical to invest this Board with the responsibility for the accreditation of training schemes and programmes. The Board would need to establish a formal link with the putative regulatory body, UK CHIP.
- 5.3.16 A range of developments has been described above. However, the development of professional and personal skills and competencies continues to depend greatly on an organisation's preparedness and capacity to invest in appropriate training and development for its staff. This will still be true and will ultimately depend on the value that Chief Executives attribute to their HI staff and their fitness to practice.
- 5.3.17 So an integral part of the strengthening of the HI profession and the development of future leaders for that profession will lie with Chief Executives' awareness of the importance of HI to the continued success of their organisations. HI staff themselves can contribute towards raising the awareness of Chief Executives but this will also need endorsement and explicit support from the highest echelons of the NHS.
- 5.3.18 The raising of CEOs' awareness of the role of HI to the future success of their organisation could also form part of a reciprocal arrangement for mentoring from the CEO in Board level and leadership skills for their senior HI staff.

5.4 Entrance Requirements

- 5.4.1 As stated above, many of the delivery mechanisms for developing HI staff and future HI leaders are already in place in a range of organisations. The NHS CfH, working in partnership with professional bodies, needs to co-ordinate and facilitate the further development of these training and development schemes.
- 5.4.2 Entry requirements into the different courses and schemes are likely to vary. The entry requirements for each scheme should be identified as part of the scheme. In addition, suitability of individuals for different types of development or/and training will be identified as part of the individual professional and personal development review.
- 5.4.3 It would be expected that HI leadership development would require an undergraduate degree, or equivalent based on experience, job or tasks/competencies, as well as technical competence to a high level within the HI domain. This could be assessed as part of the KSF development review.

5.4.4 It would also be expected that candidates for development in the three key areas identified would show considerable initiative and evidence of commitment to their own CPD. Most candidates would currently be operating at Director, Head of Service or Assistant/Deputy Director level. It would also be likely that candidates with the potential for operating at these levels with three to five years would also benefit from development in these areas.

5.4.5 It is anticipated that it would be reasonable to assume that based on the number of acute trusts, mental health trusts, primary care trusts and HI services that approximately 50 people per annum may wish to/be suitable for such a HI Future Leaders scheme. This would equate to approximately 3 people per StHA area. Such a scheme may be seen as competition against the Higher Education (HE)/Further Education (FE) courses as people tend to do one scheme/course or the other depending on people's personal circumstances. It should also be questioned whether people who had already participated in other schemes, for example the YCHI scheme, would want to participate in something else.

5.5 Recruitment

5.5.1 Appropriate personal and professional development requirements should be identified as part of the development and review process applied by all NHS organisations. The details of relevant schemes to address leadership requirements will need to be pro-actively marketed and promoted by delivery organisations. The Information Faculty within the NHS Connecting for Health Agency, together with appropriate professional bodies, should maintain an up-to-date web site as a single point of access to relevant schemes.

5.5.2 Practical recruitment and registration with any particular scheme will be the responsibility of the individual and the employing organisation. In addition to line manager authorisation, for leadership development schemes it would be helpful to enlist the support or sponsorship of the local CIO.

5.6 Summary

5.6.1 Section 5 has outlined the delivery mechanisms for the development of HI future leaders and for a strengthening of the HI discipline as a whole. It has identified the ways in which schemes could be established and ways in which potential candidates should be recruited.

5.6.2 The Section has also proposed a way in which leadership schemes could be accredited and updated, at the same time as linking to the process of regulation and the body responsible for regulation and registration.

5.6.3 It is encouraging to see that much of the infrastructure required to develop and run appropriate development schemes is already in place. Increased and improved co-ordination and administration is required and this is the area for further investment.

5.6.4 A more robust and reliable means of meeting identified HI training and development needs is required and this now likely to develop as a result, partly, of the implementation of the KSF and Agenda for Change and, partly, as a result of the greater importance attached to better HI. This will require ongoing, top-level support.

5.6.5 CIOs and CEOs each have a critical role to play in the above developments.

6 Conclusions and Recommendations

6.1 Introduction

6.1.1 This final section of the report summarises the findings of our research, draws conclusions on those findings and make recommendations as to how the issues should now be tackled. The recommendations will need to be facilitated by NHS CfH but need not be delivered by NHS CfH.

6.2 Is there a requirement?

6.2.1 All of the stakeholders agreed that there is a requirement to strengthen various aspects of HI provision within the NHS. The majority of stakeholders felt that a future leaders development scheme was needed but that this only part of the overall requirement.

6.2.2 The range of requirements was highlighted by:

- Government policy and NHS reform demanding better quality information and information systems, produced and managed by high calibre staff. There is an ever increasing role for HI to support risk management and the clinical interface.
- The need to strengthen professional development with mandatory registration, regulation and CPD. Professional development would also include the alignment and linking of the NOS with the KSF and with professional registration. These developments should be managed and maintained by the registration body and the new National Professional Development Board.
- The need for generic leadership development taking into account any specific requirements of HI senior staff, including the development of better communication, influencing and political skills. This area should also include a review of the CIO role.

6.2.3 All aspects of the requirement are referred to in Section 4.3 and form the body of these recommendations.

6.3 Is the NHS ready?

6.3.1 Our research shows very clearly that the NHS is not ready and that several issues will need to be addressed in parallel with the development of a future leaders' scheme. Amongst these issues are:

- Developing better role models at a national level
- Changes to the role of the CIO
- Building on existing local and national schemes
- Developing workforce planning
- Convincing the Chief Executive.

6.3.2 These readiness issues are identified in Section 4.4 and form part of these recommendations.

6.4 How do we get there?

6.4.1 As should be expected from a complex issue, there is no single solution to address it. Our research has identified a number of existing schemes and approaches, some of which go some way towards developing future leaders. Local examples of best practice have been identified, as well as potential areas for development nationally. These recommendations indicate how these should now be taken forward.

6.5 Recommendations

6.5.1 The recommendations that follow form the basis of a comprehensive and complex implementation plan. This implementation plan will require project management to ensure appropriate resourcing, scheduling, benefit and risk management, as well as identification of any dependencies. This will be required once approval of the recommendations has been gained.

6.5.2 **Recommendation 1.** Establish and maintain a comprehensive and single point of access for all HI-related training courses and development schemes available and relevant to HI staff development and career progression. This should include all relevant information such as entry qualifications, cost, intended candidates, duration, accessibility and specific links to the Knowledge and Skills Framework, any nationally agreed schema for CPD and registration levels with the regulatory body. This will forge the links for senior staff and link activities and schemes together for others.

6.5.3 **Recommendation 2.** Conduct a workforce survey as the start of the implementation of a workforce development strategy for HI staff. The purpose of the survey is to quantify a number of areas including overall workforce numbers by consistent workforce categories, numbers in constituencies and current skill mix. Commission additional work to develop a model of the HI workforce in 2010 – 2012. Ensure the workforce data collected is kept up to date at appropriate intervals. This will help to plan where to go next and visioning around the workforce of the future. There are plans to capture the missing workforce data by means of a workforce survey to be carried out through ASSIST and supported by Richard Granger. There will also be opportunities to capture information on Agenda for Change. It is anticipated that the survey will take place during February-March 2006, with analysis in April 2006 and the presentation of the findings to take place in May 2006 in partnership with UKCHIP, ASSIST and NHS CfH.

6.5.4 **Recommendation 3.** Commission and identify appropriate training to ensure a strengthening of information interpretation and technology translation skills. This should cover the following points:

- Interpretation of information can only take place if the rest of the information pathway has been robust:
 - If the relevant data has been captured.
 - If data quality has been assessed and managed accordingly.
 - If data processing has occurred accurately.
 - If information analysis has taken place correctly and the information is presented accordingly.
- Critical appraisal techniques are then needed by the information user to confirm that the evidence and intelligence is sufficient to support the decisions that need to

be made. There will always be incomplete information and therefore these techniques are needed to assess the likely importance of the missing information and therefore the risk that the decision will be flawed.

- Technology translation is the identification of new and emerging technologies and recognising how these will be best deployed within the delivery of care and to gain added value and advantage for commissioner and provider organisations.

6.5.5 Recommendation 4. A key recommendation and a prerequisite for underpinning the other recommendations is to make Health Informatics main stream and make the NHS ready:

- Accelerate the establishment of the profession with additional administrative and marketing resources.
- Establish a mandatory link between the KSF and registration level with the regulatory body.
- Mandate registration with the regulatory body, including mandatory CPD.
- Encourage and facilitate membership of appropriate professional bodies and work through these organisations to reach the HI workforce.
- Work with the regulatory and professional bodies to establish appropriate and consistent levels of and access to training and development for HI staff.
- Work with the regulatory and professional bodies to review and maintain the KSF.

6.5.6 Recommendation 5. Implement a programme for leadership development in HI:

- Build on the West Yorkshire Informatics Master Class Series to establish similar schemes in other health economies.
- Review and re-define the CIO role to incorporate explicit responsibility for HI staff development.
- Encourage and cajole CIOs to develop partnership arrangements with appropriate academic bodies.
- Work with CIOs to develop a programme of learning sets for appropriate HI staff; this is aimed at broadening skills, improving an understanding of the core business of care provision and improving inter-personal communication skills.
- Agree with the Institute for Innovation and Improvement how its present leadership programme can be tailored to suit HI staff.
- Collate information about other relevant leadership development courses and make this available (see Recommendation 1 above).
- Develop and resource managed secondments for all levels of staff to similar roles in other care settings to facilitate the broadening of experience without change of employer. This could be within their own organisation/ different departments and other NHS organisations.
- Develop a cohort of Chief Executives and other experienced Board-level Directors for mentoring and/or job shadowing for senior HI staff (this will also contribute to Recommendation 6 below).

6.5.7 Recommendation 6. Promote greater awareness of the criticality of HI for the future of the NHS amongst Chief Executives and other Board Directors:

- Incorporate into the NHS CfH Agency marketing campaign.
- Run road-shows for Boards at their Board meetings.
- Add components into the leadership programmes of the Institute for Innovation and Improvement, including the Gateway and Breaking Through Schemes.
- Develop CEO champions.
- Develop better and stronger role models for HI at the top of the NHS and the Department of Health, getting 'buy-in'.

6.6 Conclusions

- 6.6.1 Health Informatics has made progress over the last few years. Some of this impetus was provided by "Making Information Count" as it set the strategic direction for developments. However, additional initiatives with high profile and stronger co-ordination are now required to ensure that robust processes and procedures are put in place to take this young discipline into a respected professional body.
- 6.6.2 These initiatives are demanded by the increasing importance and high profile dependency on HI to support individual health organisations to achieve their key business goals and to support the clinician at the interface with the patient.
- 6.6.3 No single solution will suffice; the range of measures required should be supported by NHS CfH and delivered by a range of organisations including professional and registration bodies, academic institutions, Workforce Development Directorates, the NHS Institute for Innovation and Improvement and existing training providers.
- 6.6.4 This range of measures must be monitored, maintained and reviewed in a co-ordinated way by NHS CfH, providing a definitive view on the range of services and schemes to support individual and professional development.

Appendix A – List of Interviewees

Adrian McDermott, Deputy CIO, Greater Manchester SHA

Prof. Alan Gillies, University Central Lancashire (UCLAN)

Ali Bahron, Systems Development Manager, Good Hope Hospital

Amina Innamorati, Data Quality Manager, Good Hope Hospital

Angela Duffill, Assistant Information Analyst, Dudley Group of Hospitals NHS Trust

Anita Cheng, IT & Administrator, Workforce Development Confederation

Prof Bernard Crump, Chief Executive, Institute for Innovation and Improvement.

Bev Ellis, University Central Lancashire (UCLAN)

Brian Derry, Director of Informatics

Carol Clarke, Chief Executive Kennet and N. Wilts PCT and West Wiltshire PCT

Professor Chris Taylor, Head of Research ISBE, Head of School of Computer Science

Claire Maguire, Programme Lead - Gateway to Leadership & MTS, Area manager Graduate Schemes and Gateway to Leadership London and South

Craig Carman, Data Quality Officer, Dudley Group of Hospitals NHS Trust

Dave Miller, Management Consultant (former NHS IA HI Training & Development and ASSIST National Council rep

David Drew, Labs IT, Sheffield Teaching Hospitals

David Ingram, Professor of Health Informatics and Director of the Centre for Health Informatics and Multi-professional Education, University College London Univ. of London

Denis Protti, Professor, School of Health Information Science, University of Victoria, Canada

Di Millen, Head of Health Informatics, NHS CfH

Diane Benjamin, Health and Social Care Information Centre

Edith Whitehead, North East Derbyshire PCT

Georgina Moulton, Bio-Informatics Education and Development Officer, North West Institute for Bio-Health Informatics

Dr. Glyn Hayes, President UK CHIP, Chair BCS HIF

Helen Sampson, Clinical Guidelines Manager, The Royal West Sussex NHS Trust

Hywel Morris, Head of Information Services, Good Hope Hospital

Iain Buchan, Director, NWIBHI

Ian Dudley, IT Manager, Lincolnshire Shared Services

Ian White, Assistant Informatics Director, UK CHIP Council, ASSIST Council

Jackie Smith, Informatics Specialists Development Manager, Health Informatics Programme,
NHS Connecting for Health

Janet White, CIO Team, LNR StHA

Jean Roberts, University Central Lancashire (UCLAN)

Jeff Lunn, Senior Information Analyst, Good Hope Hospital

Jeremy Rogers, Head of Research Office, NWIBHI

Joanne Galloway, Labs IT, Sheffield Teaching Hospitals

John Cox, Head of Existing Systems Providers Programme, NHS Connecting for Health

Julie Schofield, Trent Branch Secretary, ASSIST

Karen Feerick, Information Officer, Dudley Group of Hospitals NHS Trust

Kevin Jarrold, RID, London

Liz Horkin, Director of Sussex HIS

Mike Cooke, Chief Executive, South Staffordshire Healthcare Trust

Mik Horswell, Assoc. Director Informatics, Chiltern and S. Bucks PCT

Monica Edmonds, E-Govt Cabinet Office

Nick Fisher, Software Developer, Good Hope Hospital

Nicola James, Information Officer, Dudley Group of Hospitals NHS Trust

Pam Hughes, Project Manager, Health Informatics Standards, Health and Social Care
Information Centre

Paul Ingram, IT Services Manager, Good Hope Hospital

Pauline Jones, Divisional Information Manager, Dudley Group of Hospitals NHS Trust

Phil Molyneux, W. Yorks CIO

Richard Goddard, Head of ICT, South Yorkshire SHA

Rob Claridge, Head of Informatics Development, South East London SHA

Robert Sparkes, Service Desk Manager, Kent and Medway HIS

Robin Arnold, Eastern Cluster RID

Robina Naseem, Informatics Specialists Development Manager, Health Informatics Programme,
NHS Connecting for Health

Roger Greene, Boards Development Advisor, Surrey & Sussex Strategic Health Authority

Simon Carr, Health and Social Care Information Centre

Prof. Steve Williams, Head of Teaching, Medical School

Susan Clamp, Director of Yorkshire Centre for Health Informatics, Univ. of Leeds

Suzanne Cliff, Information Manager for 2 Derby PCTs

Terry Hooke, E-Skills UK

Tom Sharpe, Programme Director, Physics and Computing Medical School

Tom Taylor, CEO, Shrewsbury

Wendy Clark, Director of Information, Good Hope Hospital

Appendix B – List of Research Sources

www.informatics.nhs.uk	NHS Health Informatics Community website
www.futureleaders.nhs.uk	NHS Graduate Schemes and Gateway to Leadership Programme website
www.wise.nhs.uk	NHS Modernisation Agency
www.executive.modern.nhs.uk	NHS Institution for Innovation and Improvement
www.skillsforhealth.org.uk	Skills for Health; the Sector Skills Council for Health
www.dh.gov.uk	NHS Department for Health
www.ecdl.co.uk	European Computer Driving Licence
www.ucas.co.uk	UCAS
www.kingsfund.org.uk	The King's Fund
www.cranfield.ac.uk	Cranfield University
www.uclan.ac.uk	University of Central Lancashire
www.ucl.ac.uk	University College London