

## Qualitative Research in Health & Social Care

# **An investigation of the emergent professional issues experienced by nurses when working in an e-health environment**

**A collaborative project between the Information in  
Nursing Forum at the Royal College of Nursing and  
the School of Health & Social Care,  
Bournemouth University**

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**September 2007**



## Collaborative Project

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September 2007  
ISBN: 978-1-85899-254-9

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## Acknowledgements

The project was managed by a steering group consisting of:

- Professor Dame June Clark – Professor Emeritus, University of Wales, Swansea; Chair, Information in Nursing Forum;
- Clive Andrewes – Head of Practice Development, School of Health and Social Care, Bournemouth University;
- Elizabeth Hunter – Healthcare Information Management Consultant; Director, Atlanta Prompt Advice Ltd; Committee Member, ING;
- Bernice Baker – Independent Nurse Consultant/Lecturer Practitioner, School of Health and Social Care, Bournemouth University; Vice Chair, ING.

The project was part funded by a Royal College of Nursing Forum Projects bid but could not have been undertaken without the help in kind provided by the School of Health and Social Care at Bournemouth University.

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## Executive Summary

Nurses in all four UK regions will, in the next few years, be increasingly required to use information and communication technology (ICT) and to integrate this into their practice. Major drivers of this development are the nationwide National Health Service ICT programmes – Connecting for Health in England, Informing Healthcare in Wales, Scottish Executive E-health Department in Scotland, and the Department of Health, Social Services and Public Safety's (HPSS) Information and Communication Technology Strategy in Northern Ireland.

This project, which resulted from a successful bid for Nursing Forum project funding made by the RCN Information in Nursing Forum in April 2006, was undertaken in collaboration with the School of Health and Social Care (SHSC) at Bournemouth University. The aim of the project was to explore the current professional and ethical issues that are emerging with the use of new technology (RCN 2006a). It was envisaged as a small-scale practice development project (supported by the expertise and resources of the SHSC) in which the project itself could be used to develop awareness among nurses of the emerging issues and implications of the use of ICT in nursing practice.

The project offers a collation of four current perspectives from nurses at the frontline of health care across the UK in 2007. Two of these perspectives were generated by the project itself and were based in England:

- Key informant interviews;
- Focus groups.

These data are enriched and extended by consideration and incorporation of the findings of other current RCN/Information in Nursing Forum work which focuses on similar concerns:

- RCN Nursix survey 2006 (UK-wide) (RCN 2006b);
- RCN/SHSC national e-health workshops (Wales and Scotland).

The collated findings of these four perspectives are discussed in the context of the available literature.

The small scale of this study and the lack of random sampling mean that its findings cannot be generalised to the whole of the nursing population. However, the dependability of the findings is highlighted by the commonality of the findings across all four projects. The main finding of the project is that there is an enormous gap between the vision of the

potential of e-health as it was enthusiastically articulated by the e-health leaders and the reality experienced by frontline nurses.

The project identified:

- Lack of access to hardware and effective 24/7 ICT support;
- Tension between decision support, central standardisation and the need for professional judgement;
- Fear of use of data to monitor performance (described as 'Big Brother');
- Fear that computerised care will take nurses away from direct patient care;
- Concerns about confidentiality and security of records and about sharing information;
- Lack of training and education, or experience of training that was not relevant to practice;
- Concern about lack of nursing input into system design;
- Lack of effective integration of e-systems and care pathways across health and social care organisations;
- Lack of an effective independent voice on behalf of nursing;
- Awareness of shortfalls leading to cynicism in the midst of hope.

These findings are collated and discussed as nine themes:

1. Need for a clearly articulated vision, coupled with a recognition of the gap between the vision and nurses' operational experience;
2. Lack of effective integration of e-health systems and care pathways, coupled with concerns about the sustainability and likelihood of success of the national ICT programmes;
3. Lack of nursing input into the design of systems, coupled with tensions between central standardisation, decision support and professional judgement;
4. Lack of access to appropriate hardware, coupled with concerns about the reliability of systems;
5. Lack of appropriate education and training, coupled with worries about the resistance of older nurses to ICT;
6. Concerns about confidentiality and security of records and sharing information, coupled with fears about legal issues and professional accountability;
7. Fears that computerised systems will take nurses away from direct patient care, coupled with fears that systems do not reflect nursing practice and are not patient/client-centred;
8. Fear that computerised data might be inappropriately used for performance management;
9. Lack of an effective independent professional voice on e-health issues.

The 'issue' themes offered above were reflected in different ways and intensities across the UK. Highlighting them from the methodology of this project does not mean that every issue will be found in every area of practice in every area of the UK. What is apparent from the work within this project is that these issues are articulated by nurses in a sufficiently dominant manner to suggest that they are worthy of recognition.

The project exposed the need for innovative approaches and collaboration among all stakeholders to address these issues and that, to achieve this 21<sup>st</sup> century integrated 'whole system awareness', traditional mindsets need to be revisited.

The recommendations are set out in tabular format for each of the stakeholder groups (government and health providers, commercial suppliers, professional regulators, professional organisations and educational providers), as are the attitudinal ('mindset') changes needed to enable the actions to close the gap.

## 1.0 Introduction and Context

The 21st century is the age of technology, particularly information and communications technology (ICT). Health care and health maintenance are fast becoming recognised as areas that can be supported by a wide variety of ICT options to improve the quality of patient care and the efficiency of the service. The term e-health is now used to encompass and describe all the applications of ICT to health care, including: telemedicine (remote diagnosis), telecare (assistive technology including biometric monitoring to support the care of patients in their own home), e-learning, electronic prescribing and monitoring of medications, use of email and text messaging between health professionals and between health professionals and patients, and the development of electronic patient records. Nurses across the UK will, in the next few years, be increasingly required to use ICT as a basic tool and to integrate it into their practice. Major drivers of this development are the national programmes for the introduction of ICT into the NHS – Connecting for Health in England, Informing Healthcare in Wales, Scottish Executive E-health Department in Scotland, and the Department of Health, Social Services and Public Safety (HPSS) Information and Communication Technology Strategy in Northern Ireland.

The Royal College of Nursing (RCN) Information in Nursing Forum has for some time been concerned that nurses are as yet unprepared for these initiatives, and believes that the RCN needs to develop policy and produce guidance for its members on these matters. A prerequisite for this is to identify the professional issues that are implicit in these developments and the concerns felt by nurses, especially those working 'at the coal face'.

This project resulted from a successful bid for Nursing Forum project funding made by the RCN Information in Nursing Forum in April 2006. The project was undertaken in collaboration with the School of Health and Social Care (SHSC) at Bournemouth University. It was envisaged as a small-scale practice development project (supported by the expertise and resources of the SHSC) in which the project itself could be used to develop awareness among nurses of the emerging issues and implications of the use of ICT in nursing practice.

The project offers a collation of four current perspectives from nurses at the frontline of health care across the UK in 2007. Two of these perspectives were generated by the project itself and were based in England:

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- Key informant interviews;
- Focus groups.

These data are enriched and extended by consideration and incorporation of the findings of other current RCN/Information in Nursing Forum work which focuses on similar concerns:

- RCN Nursix survey 2006 (UK-wide);
- RCN/SHSC national e-health workshops (Wales and Scotland).

The collated findings of these four perspectives are discussed in the context of the available literature. The project thus provides a snapshot of the current situation as experienced by nurses practising in this emerging e-health world.

The project was managed by a steering group consisting of:

- Professor Dame June Clark (Professor Emeritus, University of Wales, Swansea; Chair, Information in Nursing Forum);
- Clive Andrewes (Head of Practice Development, School of Health and Social Care, Bournemouth University);
- Elizabeth Hunter (Healthcare Information Management Consultant; Director, Atlanta Prompt Advice Ltd; Committee Member, ING);
- Bernice Baker (Independent Nurse Consultant/Lecturer Practitioner, School of Health and Social Care, Bournemouth University; Vice Chair, ING).

## 2.0 Aims and Methodological Approach

### 2.1 Aims

The aim of this project was to explore the current professional and ethical issues that are emerging with the use of new technology (RCN 2006a), with the production of a document made available to all RCN members/nurses online to illustrate the currently emerging issues in e-health plus any associated best practice recommendations (RCN 2006a).

### 2.2 Methodological Approach

The methodological approach was driven by two factors:

- The small scale of the project was necessitated by limitations of time and money;
- The desire to incorporate, within these limitations, as broad a picture of the situation as possible, recognising that each part of this study could be used as a basis for further work.

For these reasons, it was decided to collect and collate data from four sources:

- Interviews with a small sample of carefully selected key informants holding leadership positions in the field of nursing informatics;
- Focus groups with frontline nurses;
- Analysis of the qualitative data contained in the most recent RCN Nursix survey (RCN 2006b);
- E-health workshops held in Wales and Scotland (Baker & Edwards 2005, 2006).

The data from all four sources were reviewed in the context of a brief review of the relevant literature. The data were analysed using thematic content analysis and were continually reviewed in the light of the emerging themes which were, in turn, collapsed into key issues. Trustworthiness was achieved through validation of field notes and transcripts by respondents and peer review of findings (Holloway & Wheeler 2002).

### 2.3 Limitations of the Study

The small scale of this study and the lack of random sampling mean that its findings cannot be generalised to the whole of the nursing population. However, the dependability of the findings is highlighted by the commonality that is evident across all four projects (see section 4.1).

## 3.0 Four Perspectives: Methods and Findings

### 3.1 Interviews with Key Informants

#### Introduction

Nine nurses were selected for interview on the basis of their high profile within the healthcare ICT world. Their e-health involvement included:

- Advising government;
- Policy making;
- Education;
- Healthcare practitioner.

The aim of the interview was to enable the interviewee to express their ideas and thoughts around e-health and the impact it could have for nurses. They were conducted either face-to-face (three interviews) or over the telephone (six interviews) and were tape-recorded. The interviews lasted for between 45 minutes and one hour, and each one started with the following two statements:

This is a project that we are doing for the RCN and Bournemouth University. It is an investigative project where we would like to explore people's views on whether there are any professional issues around e-health and the implications that this will have for nurses.

E-health (which is the generic expression now used to refer to any form of ICT-enabled health system reform) is a global phenomenon. It includes developments around the softer professional and ethical issues associated with ICT.

The interviews were analysed using content analysis.

#### Findings

All interviewees were very positive about e-health. They recognised that health care was changing dramatically in the 21st century and believed that e-health would have a significant part to play and would be very beneficial to nurses and patients.

#### Key issues

The following key issues emerged from the content (see Appendix 1 for more details):

##### **1. Future direction of health care:**

Interviewees had a clear vision of the global future of e-health and how future health care may be delivered. E-health would be supporting an

NHS arena that is fast moving towards having a preventative health focus. Healthcare delivery, however, is moving away from secondary to primary and community-based care, which encompasses voluntary and alternative providers.

## **2. Technology:**

Technology will be the key to this new future as increasing numbers are enabled to be cared for at home and technology will be the enabler. This will impact on and change the relationships and dynamics between health professionals and patients.

## **3. Skills:**

Learning needs have to evolve. Nursing will include skills associated with ICT, managing information, decision support and managing the changing nature of the patient–clinical relationship.

## **4. Patient records:**

Interviewees were aware of issues concerned with multidisciplinary, real-time and point-of-care recording of information. There is a need to work on processes to support professionals with this. The difficulty with this is that interviewees were concerned that ‘we don’t know what we don’t know’. They also spoke of the risk that audit processes might be seen as ‘Big Brother’ and that recording of information might be compromised.

## **5. Handling information:**

Interviewees highlighted issues associated with the validity of information sources, quality of data input and the impact of the ‘Big Brother’ syndrome.

## **6. Confidentiality and legality:**

Interviewees believed that the availability of information on systems could encourage an environment of legal conflict, which could be much more complex due to the amount of information available.

Regarding confidentiality and data sharing, some interviewees felt that this was not a problem; others thought that the professional debate had not yet been aired. It was thought that ‘gate keeping’ and the related ethical issues in the context of protocol-driven care could be problematic. It was recognised that there was a need for an ethical debate around protocol-driven care versus the interests of patients.

## **7. Sharing of information:**

Issues raised included: what competences would be required to share information; clarity of reasons for sharing/collecting information; and gaining patient consent to share information.

#### **8. The informed patient:**

Patients having access to their healthcare records and being able to add to their own record will change the consultation and caring process. It was perceived that nurses may become facilitators of this process and would need to be aware of the needs of vulnerable clients. Relationships with patients may become more challenging. Nurses will need support and education on how to nurse the 'informed' patient.

#### **9. Access:**

Interviewees were aware of current developments in role-based access and the possible associated issues that this raised in relation to accountability. Within role-based access there is a possibility that nurses might have either inappropriate or insufficient access. Comments were made around adequate audit trails and the effective management of these trails.

#### **10. Structured documentation:**

It was thought that learning to use a new standardised structure for documentation could be a challenge for clinicians, although interviewees were aware that there was the possibility of free text options. Documentation would need to be defined in terms of how it was to be undertaken in a more universal way.

### **3.2 The Focus Groups**

#### **Introduction**

The purpose of this part of the project was to expose and explore issues that nurses in a variety of roles key to the implementation of e-health are currently experiencing. To ensure as wide a view as possible, two focus groups were constructed – one in a rural area and one in a metropolitan area. The two areas selected were:

- South West England;
- Central London.

It was considered important to obtain the views of nurses working, teaching or managing at the frontline in the NHS in as wide a variety of fields as possible. Thus, the groups targeted were nurses working in:

- Acute hospitals;
- Primary care;
- Community services;
- Mental health;
- Paediatric services;
- Education;
- NHS Direct;
- Regional nurses/strategic health authority nurses.

It was not possible to have a representative from each of these areas attend each focus group – in some cases it became apparent that a teleconference was the only method available to ensure input. Thus, two of the members (one educationalist, one regional nurse) had to be contacted using a recorded teleconference.

A total of 11 nurses and one midwife participated across the two groups. Consent was obtained from all participants prior to recording. The tapes were transcribed and the transcripts were then sent to each participant for verification and subsequently anonymised. The session was initiated with the open question: ‘what do you see as the potential impact of e-health on nurses and nursing?’ and subsequent discussion focused on the issues that they raised.

## Findings

Content analysis revealed eight key themes raised by the participants (see Appendix 2 for more details):

- The NHS needs to develop joined-up, client-focused pathways and processes that cross areas of care and reflect the patients’ experience, with effectively organised referral arrangements;
- Lack of nurse input into the design of ICT systems – ICT systems do not support the way nurses work;
- Lack of an effective independent voice on behalf of nursing;
- Concern about whether the data/record accurately reflect nursing – concern about accuracy and confidentiality;
- Worries about the use of ICT-based decision support – fear of ‘computer-driven care’ and the loss of professional judgement;
- Fear of the (mis)use of data to monitor nursing workload;
- Inadequate education and training – recognition that e-learning is not effective for everyone;
- Inadequate access to, and 24/7 support for, ICT-enabled care.

## Key issues

The focus groups clearly identified:

- Need for effective integration of information systems and pathways of care across the health and social care economy;
- Need for records that are client-centred and reflect their needs and outcomes in a format that permits clients to control access;
- Need for records to reflect the full range of nursing reasoning, activity and outcomes;
- Nurses need systems that support data management, pathway implementation and provide access to best evidence, yet facilitate and record independent professional judgment;
- Need for ready access to education, especially around the use of ICT, to re-design the patient journey rather than commercially focused training. This education can be partially, but not wholly, e-

based, is dependant upon learning styles and technological affinity, and requires funding and time;

- Need for ready access to portable, reliable hardware and 24/7 ICT support;
- Need for a supported voice for frontline practitioners at all levels of ICT implementation, from national policy to software design and to establishment of local networks.

### 3.3 The RCN Nursix Surveys

#### Introduction

At the time of the project, the RCN had undertaken three online surveys of nurses' attitudes towards and opinions about e-health, in particular the electronic patient record (RCN 2004, 2005, 2006b). In the 2006 survey (RCN 2006b), 4,450 responses were received: about 12% from Wales, 29% from Scotland, 56% from England and a small number from Northern Ireland. The responses were divided accordingly and were analysed separately to take account of the differences in the four ICT programmes.

In addition to the quantitative analysis (RCN 2006b), respondents were invited to use the final section of the questionnaire to make comments or add further information. For the purposes of this project, the 2006 data contained in these free text comments were subjected to content analysis using the 'constant comparative method' of analysis until no new categories were identified.

#### Findings

The analysis revealed some differences between the four regions, although the major issues were the same across the UK. The responses from Wales and Scotland appeared to be very similar to those in the previous surveys, but in England this time there seemed to be no-one who hadn't heard of the Connecting for Health programme, although there were a number who wanted more information about it.

Nurses appear to be accepting the introduction of electronic records as a necessary development in the NHS. They see the benefits for patient care through improved communication, the availability of accurate information at the point of care, the facilitation of multidisciplinary working, reduced paperwork, fewer missing case notes and abolition of illegible handwriting. They see electronic records as a way of bringing in national standards of care and improving patient safety.

Nurses who were already using electronic records expressed considerable enthusiasm for them. They discussed teething problems and how they had been overcome. It appeared that those who had used

electronic records longest could not imagine working without them. People spoke positively of wanting a national integrated record system.

There was very little comment about the use of ICT as a change agent. It was all very functional and operational, with people mostly cautious about the future.

## Key issues

Even those who were enthusiastic, however, did express some concerns. The major concerns expressed were:

- The need for good training;
- The need for easy access to adequate computer hardware – nurses are still having to travel long distances to get access to a computer or have to queue up on wards or in offices;
- The reliability of computers and the need for 24/7 technical support and backup;
- There are concerns for nurses, including older nurses, who are not computer literate;
- Issues of confidentiality and security of records;
- Whether the national programmes for ICT are affordable in the current climate of major and widespread NHS deficits, or whether they are a good use of limited resources;
- There was some scepticism about the likely success of the programmes in the light of previous major public service computer failures;
- Worry that computerised record systems will take nurses away from their patients and direct patient care, and some fear that it would be more time consuming than paper record keeping.

The general support for electronic records was encouraging, but it has to be remembered that respondents were a self selected sample of those with access to ICT. There seems no doubt about the practical issues that have to be addressed as electronic records are introduced. It does seem now that nurses are expecting this as a fait accompli, and that the onus is therefore on nursing leaders and nurse informatics specialists to engage with the programmes and the development and implementation of systems on behalf of their colleagues. Nurses are now waiting for it to happen; it is nurse informaticians who must ensure that the systems provided for nurses are the best and most effective possible, and nurse leaders must demonstrate the change this will bring for the profession.

## 3.4 The RCN/SHSC E-health Workshops

### Introduction

As part of a separate collaborative project, the SHSC at Bournemouth University, in collaboration with the RCN, is currently undertaking a series

of e-health workshops in each UK region. To date, two of these workshops have been held – in Cardiff and in Edinburgh (Baker & Edwards 2005, 2006). The generic aims of the four workshops are:

- To highlight the issues emerging from working in an e-health context;
- To make recommendations for developments in the future.

Since these aims are similar to those of the present project, it was decided to include data from the two workshops that had already been held.

## Findings

Each workshop report generated a force field diagram which attempted to illustrate the key findings or dominant issues:

**Table 3.1. Edinburgh and Cardiff workshops: force fields**

	<b>DRIVING FORCES</b>	<b>RESISTORS</b>
<b>EDINBURGH WORKSHOP</b>	<p>Recognition of difficulties with the current rapidly changing environment</p> <p>Recognition of the need for a long-term strategic view of e-health</p> <p>Recognition of the urgent need to integrate systems to avoid duplication</p> <p>There is a need to record qualitative data that reflect client needs and outcomes</p> <p>There is a need for policies and guidelines to aid the sharing of patient information across boundaries</p>	<p>Currently there is a gap between strategic vision and operational frontline day-to-day reality</p> <p>Lack of nurse 'buy in' to ICT – seen as information management rather than improving care delivery/practice</p> <p>Fear that ICT/e-health could undermine the professional standing of some senior nurses.</p> <p>These restraining forces may be linked to access/availability of education/learning opportunities</p> <p>Lack of hands-on access to hardware and appropriate tools</p> <p>Lack of available 24/7 operational ICT support</p>
<b>CARDIFF WORKSHOP</b>	<p>Recognition that the information held in the electronic patient record needs to be client-centred. This client-centred information is an essential element in a health record from a nursing perspective</p> <p>Recognition that this information requires radical new levels of client involvement, recognising and respecting the wishes of individuals</p> <p>Willingness to develop the content of this record as part of nursing/practice development</p>	<p>The current record appears to be medically dominated</p> <p>Articulating and developing client-centred, nursing-based approaches need commitment, support, time and funding to evolve and emerge</p> <p>It is not perceived that records/data that result from current approaches reflect nursing or the clients' perspectives</p>

## Key issues

Whilst the focus and format of the two workshops differed slightly – as each reflected local needs and circumstances – there were clear similarities between the two. Moreover, many of the issues that emerged were very similar to those found in other parts of this project.

## 4.0 Issues and Areas of Concern

### 4.1 Nine Key Issue ‘Themes’

The issues that emerged from the four sub-projects are shown in Table 4.1 as similarities and differences across the four sources of data. Throughout the UK-wide discussion, it is important to recall the different ways in which the observations were sourced and generated (see section 2.2) – for example, the RCN Nursix surveys included participants from all four UK regions and focused primarily on the electronic patient record, whereas the focus groups and key informant interviews reflect only experience from an English perspective. Not all of the data sources contributed data to all of the issues identified, nor did the participants visualise or experience exactly the same combinations of issues.

**Table 4.1. Four perspectives: similarities and differences**

Issue identified	Key informant study (England)	Focus groups (England)	Workshops (Wales & Scotland)	Nursix surveys (UK-wide)
Need for a ‘blue sky’ futuristic national/global visualisation of an e-health future	X			
Lack of effective integration of e-health systems and pathways of care across health/social care experienced at frontline, day-to-day operational level		X	X	X
Recognition of the gap between strategic vision and operational reality/experience		X	X	X
Lack of access to appropriate hardware; lack of 24/7 ICT support in workplace	X	X	X	X
Lack of nurse input into the design of systems		X	X	
Lack of training and education or training not relevant/appropriate	X	X	X	X
Concerns about confidentiality and security of records, sharing information, legal issues and professional accountability	X	X	X	X
Fear that computerised systems will take nurses from direct patient care or could take more time and cause duplication		X	X	X
Fear that nursing the ‘informed patient’ will become more challenging	X			
Concerns (fear or experience) that computerised records do not reflect nursing or are not client-centred and do not reflect client wishes	X	X	X	
Fear that computerised data might be used for monitoring workload and/or performance management	X	X	X	
Worries that older nurses might be resistant to the use of ICT		X	X	X
Tensions between central standardisation, decision support and the requirements of professional judgement	X	X	X	
Affordability/sustainability/likely success of the national ICT programmes		X		X
Lack of an effective, independent, professional voice on behalf of nursing	X	X	X	

Table 4.1 identifies 15 areas of concern or awareness of need. These 15 areas can be condensed into nine related themes:

1. Need for a 'blue sky' futuristic national/global vision of the future, coupled with a recognition of the gap between strategic vision and the current operational reality/experience;
2. Lack of effective integration of e-health systems and pathways of care across health/social care, coupled with concerns about the affordability, sustainability or likely success of the national ICT programmes;
3. Lack of nurse input into the design of systems, coupled with tensions between central standardisation, decision support and the requirements of professional judgement;
4. Lack of access to appropriate hardware or a lack of 24/7 ICT support in the workplace, coupled with concerns about the reliability of ICT;
5. Lack of training and education, or concern that the education and training provided was not relevant or appropriate, coupled with worries that older nurses might be resistant to the use of ICT;
6. Concerns about confidentiality and security of records and sharing information, coupled with fears about legal issues and professional accountability;
7. Fear that computerised systems will take nurses from direct patient care, would take more time and could cause duplication, coupled with the fear or experience of computerised records not reflecting nursing, not being client-centred and not reflecting clients' wishes;
8. Fear that computerised data might be used for monitoring workload and/or performance management;
9. Lack of an effective, independent, professional voice on e-health issues on behalf of nursing.

## 4.2 Key Issue Themes Discussed in the Context of Relevant Literature

### Theme 1

**Need for a 'blue sky' futuristic national/global vision of the future, coupled with a recognition of the gap between the strategic vision and the current operational reality/experience**

All of the key informants clearly visualised and articulated the global e-health future and the associated strategic changes that were either needed or already happening:

*The NHS Plan and the supporting subsequent governmental papers have stated how health care is to change towards providing preventative care programmes, moving health care from secondary care into primary care. This, together with the emerging Foundation Trust status, is causing great changes*

*within the health arena. New providers of care are emerging from voluntary and charitable organisations to supermarkets and stores e.g. Asda.*

*We need new skills e.g. to access information in a home, to access equipment, need support system. More specialist roles – hospital will be more technical and the patient and nurse will be more technically focused. Healthcare assistants will be trained to undertake many nursing jobs. Senior nurses may do the initial assessments and then delegate to juniors.*

This visualisation of the ideal future was not a key issue for any of the other groups. This is not to say that nurses at more operational levels were not aware of these future possibilities – rather, their observations related to how their current experience locally could be made to work. No nurses were against the concept of an e-health future and e-records – they all could see how it would aid their practice. The difference was that they chose to explain their reality and articulate the local ‘now’ needs/worries as opposed to looking towards a more global strategic vision of how it will/may be. Most importantly, there is clearly a gap between the key informants’ vision and the frontline nurses’ current reality. For example:

*From the Edinburgh Workshop*

Driver: Recognition of the need for a long-term strategic view of e-health.

Restrainer: Currently, there is a gap between strategic vision and operational frontline day-to-day reality.

*From the Cardiff workshop:*

Drivers: Recognition that there needs to be client-centred information in the e-record. This client-centred information is an essential element in a health record from a nursing perspective. Recognition that this information requires radical new levels of client involvement, recognising and respecting the wishes of individuals.

Restrainer: Records/data that result from current approaches do not reflect nursing or the clients’ perspectives.

*From the analysis of the RCN Nursix survey 2006:*

Most of the qualitative responses were all very functional and operational, with people mostly cautious about the future... Where nurses are already using electronic records, they discussed teething problems and how they had been overcome,

and expressed considerable enthusiasm for them. It appeared that those who had used electronic records longest could not imagine working without them. People spoke positively of wanting a national integrated record system.

Gaps in strategic delivery are mostly associated with prospective business or management concepts, such as change management, project management and people management, but the nursing literature reflects more retrospective investigation of existing or projected ICT options – what nurses and other frontline staff felt was really needed based on their current or past experience. Most of the literature describes or reports on small local studies, reflecting the nature and localised scope of nurse opportunity as noted above.

The nursing literature spans frontline clinical practice in secondary (Lynn 2002, Kirshbaum 2004), primary (McKenna et al. 2004, Meal et al. 2004), community (Chan et al. 2004), education (Wishart & Ward 2002), specialist areas (Pagliari et al. 2003) and nurse management (Gould et al. 2001) and is generated by nurses nationally (Hughes 2003) and internationally (Barr 2002, Simpson 2004, Lee 2005). There is also evidence of British nurses seeking learning and experience from the USA (Loveridge 2001).

The literature identifies some consistent elements that are supported by the project findings:

- Nurses are willing and keen to utilise e-health/ICT options and seek out best practice methods of achieving this (Loveridge 2001, Hughes 2003, Chan et al. 2004, Meal et al. 2004, Mannan et al. 2006, Berglund et al. 2007);
- Local nurse, client and other stakeholder engagement with and ownership of the idea that this will improve local care is critical (Lynn 2002, Pagliari et al. 2003, Kirshbaum 2004, Simpson 2004). In work that focused on the development of an electronic care pathway in a mother and baby unit where a client-centred, stakeholder engagement process was evaluated, one patient participant shared a feeling which is very similar to the aspirations of the nurses involved in this project:

It's good to see someone trying to involve the patients...It was so good to be asked about me and actually be listened to. I feel really good about me. (Hayward-Rowse & Whittle 2006, p569)

- There is a local management/strategic leadership element involved in achieving this local development (Gould et al. 2001, Barr 2002, Hughes 2003, Simpson 2004, Curran & Curran 2005, England &

Stewart 2007) together with recognition of the difficulty nurses have in actually influencing change at a local level (McKenna et al. 2004).

- The persistent observation is that nurse commitment to local ICT in all areas is strongly related to past/current computer experience and the level or type of training/education/professional development to date and that this element deserves further research (Gould et al. 2001, Wishart & Ward 2002, Hughes 2003, Chan et al. 2004, Kirshbaum 2004, Lee 2005, Willmer 2005).

Many of these elements reappear in subsequent themes but there appears to be a trend that nurses concentrate on local operational needs to maximise the reality of delivery or learning today, as opposed to deriving any sort of reassurance from blue sky visioning of the future.

## Theme 2

### **Lack of effective integration of e-health systems and pathways of care across health/social care, coupled with concerns about the affordability, sustainability or likely success of the national ICT programmes**

The focus groups in particular identified the need for integration of pathways across health/social care, and within organisations themselves, to enable ICT/e-record options to be effective; avoiding duplication was a key element. For example:

*No-one is looking at the whole service altogether...we could save money if these services were coordinated – doing it like a care pathway.*

*...one of our failures has been to chunk our little bit and make that perfect but forget all the bits that arrived before and all the bits that happen afterwards so I certainly think there is... potential across organisational boundaries.*

*Any system is only as good as the sum of its parts; if those parts are not linked, it's not going to work.*

*I also work with social services and the two systems don't talk to each other and that is a real difficulty, so we're continuing to do paperwork all the time, and for single assessment process we are not doing one single assessment process we are doing several because the computers don't talk to each other. So it caused a lot of difficulties and I think there is a big area for error.*

Key informants were well aware of this problem:

*Some implications from the changes are...difficulty with communicating across teams and across different organisations.*

Workshop participants expressed the same concern:

*There is a need for policies and guidelines to aid the sharing of patient information across boundaries. Key issue: lack of integration of systems and duplication. (Edinburgh)*

Participants also recognised issues relating to sustainability and associated cost:

*Technology is always changing – what's in now, in six months time is completely obsolete...if health professionals and patients are used to doing something, even though it will benefit them eventually in the future, having something new that you are constantly changing [is difficult]. If the organisational culture is not one that embraces change you will have a problem. (Focus Groups)*

Respondents to the RCN Nursix survey asked whether the national programmes for ICT are affordable in the current climate of major and widespread NHS deficits, or whether they are a good use of limited resources.

Responses from all parts of the project thus identified both a need for integration across traditional health/social service boundaries and a need for constant updating and development of both the client-centred pathways and the associated technology.

The literature similarly reflects and addresses these elements:

- The need for interdisciplinary communication and cross-boundary working/data quality (Werrett et al. 2001, Meal et al. 2004, Blaser et al. 2007);
- The need to integrate systems into existing practices and work flow (Martin et al. 2007), understanding both technical elements and the less tangible aspects of care while recognising that the latter might be more relevant to a successful system (Doherty & King 1998), with the need for data standards to produce records that truly reflect nursing (Wallis 2007);
- The need for cross-organisational process change, linking new technology with existing systems (Loveridge 2001, Simpson 2004), involving nurses in testing and development (Berglund et al. 2007);
- Recognition of the challenges associated with integrated systems:

Frequently e-records are not successful because of lack of compatibility between systems and delivering infrastructure support needs. Integrated IS have often been focused on vertical integration with one computer system (rather than horizontal integration among different computer systems)... Even when these narrow integration efforts are well managed, lengthy system development often makes the final system obsolete because evolving clinical practices have changed during the implementation and integration phase. (Staggers et al. 2001)

- Hughes (2003) suggests that in the UK the benefits associated with the use of ICT in nursing – for example, facilitating seamless health and social care – still need to be fully harnessed and:

Clearly there must be investments. These investments will need to ensure that the use of ICT in nursing is compatible with national plans in all areas of health and social care. (Hughes 2003, p344)

### Theme 3

#### **Lack of nurse input into the design of systems, coupled with tensions between central standardisation, decision support and the requirements of professional judgement**

This was a thread that occurred in many ways in many themes. Where and in what terms it was expressed reflected the experience and location of the nurse respondents and/or the focus of the session they were involved in. For the key informants, this issue was something nurses should be aware of and be supported in so as to begin changing their 'frame of mind':

*E-health is seen as a multifaceted electronic process which will support decision making, provide information, support research, exchange of knowledge and education. There are implications with use of IT as it works in 'real time'. Nurses' 'frame of mind' needs to be changed and supported.*

*Skills will be required to manage this virtual environment. Nurses may not have entered nursing to manage call centres. Decision support needs skills – telephone triage – need to use algorithm.*

*We are moving into an 'unknown area', NHS Direct, e.g. has caused deskilling of some traditional skills and instead requires decision-making skills and people skills to 'maintain contact and rapport'.*

For nurses in the English focus groups, the perceived lack of involvement in design was more experiential and questioning:

*You can have people very confident at writing a system, the problem is they need access to people who are competent to tell them what system is required.*

*People were called for LSP [local service provider] work at very short notice and it became quite clear that the people [who went] weren't up to speed with developments...all this time is spent on explaining how you should look after a patient to a group of people who are meant to be experts...huge problems...it wasted hours and hours...a lot of people got fed up to the point where you think I can't do this anymore.*

*My main worry is that the whole thing which [is] designed around us is not at all useful and is going to be increasing the time that we spend inputting at the computer rather than working with a client.*

*...and there was a concern about whether that would slow up the hospital so much we could not actually treat patients. So there is a bit about how do you get the system to really work with you in order to produce an efficient and safe service for patients.*

With regard to tensions between standardisation, computer-based decision support and nurses' professional judgement, nurses in the English focus group noted:

*I increasingly feel that my work is computer-driven really, that it's led by procedure not by client need and I'm spending more and more time on a computer and less time with my clients.*

*These electronic systems are written by statisticians and computer experts and they're not written by patients or people.*

*...it is about how you build in systems and processes, not necessarily software but systems and processes which actually take into account the different needs of Mr Smith, Mr Jones and Mr Whoever...And those are the hurdles that we haven't really addressed and what is being imposed is a one size fits all result potentially...*

*...there is the bit about do you take the decision making skills away from the nurse if the machine beeps at her when she has to do something and she does not actually have to learn why it is beeping at her. So there is a bit of, does it actually de-skill and take the ability, the thought processes and the ability to problem solve out and of course that is a risk I think and I think you would have to do a bit of an analysis really...*

*Going back to decision making and how technology could hinder that rather than help. I think that [this] is probably an area for research.*

The workshops reflect experience to date in Wales and Scotland. For nurses in the Cardiff workshop (which was focused primarily on the needs of a nursing e-record), a major concern was:

*Client-centred information is an essential element in a health record from a nursing perspective, and a recognition that this information requires radical new levels of client involvement, recognising and respecting the wishes of individuals.*

This statement of the need for the record to be client focused resulted in these key issues being highlighted by the nurses in Wales:

- Exposure of the tension between central standardisation and the requirements of professional judgement;
- Recognition of the need for minimal levels of central standardisation, which of itself must be subject to on-going development as the needs of client-centred health care emerge.

Interestingly, nurses at the Edinburgh workshop noted that they felt there was a tendency for nurses to 'see IT as information management rather than improving care delivery/practice because of a lack of nurse "buy in" to IT'.

The RCN Nursix survey was focused primarily on the electronic record and seems there is no doubt about the practical issues that have to be addressed as electronic records are introduced. It does seem now that nurses are expecting this as a fait accompli.

There is much in the literature that confirms this theme. Inevitably, much of this is either international or is focused on more established areas of e-healthcare implementation, such as telephone consultation and call centres. For example, Collin-Jacques & Smith (2005) compared the experience of nurses in telephone call centres using computerised

decision support in Quebec and England. She found important differences in the authority that nurse advisors had over the design of their computerised infrastructure, finding that nurses in England were more 'reactive' in the process of technological design:

The state championed the development of NHS Direct in a top-down exercise of phased national coverage and the computerized infrastructure was a sophisticated physician-designed and algorithm-based expert system. Nurses were reactive to state initiatives and software development involved other clinicians and government representatives and not only nurse advisors [as was the case in Quebec]. (Collin-Jacques & Smith 2005, p20)

Nurses in the English focus groups articulated this same view in many other areas apart from NHS Direct. For example:

*...there is also the way in which that [computerisation] change is introduced is seen as top down imposed rather than we actually want this tool to be something for us...*

The experience of Quebec suggested that when nurses were able to shape their computerised infrastructure and build software solutions based on existing nursing skills, autonomy, and nurse philosophy, this input substantially enhanced nurse control over the work processes of a call. Pagliari et al. (2003), looking at the development of an integrated care pathway (ICP), similarly notes dedicated resources and clinicians' time plus ownership by the participants as key recommendations for success and longevity of the ICP, whilst Wallis (2007) emphasises the need for nurses to become involved in developing data sets to produce records that truly represent nursing.

It seems that if nurses are not able to have input into the design and content/philosophy of the systems, this retrospectively leads to professional issues around method, content and professional judgement. This 'retrospective nurse awareness/experience' is also exposed – directly and indirectly – throughout most of the themes of this project.

In an investigation of nurse 'resistance' to computer systems in three NHS hospitals, Timmons (2003) found:

Resistance was discursive (it was as much about ideas as systems), and was contextualised in terms of wider discursive categories drawn from the realms of nursing...The systems did

not take account of the ways in which the nurses practised, which were often deep-seated, and, to the nurses, entirely justified. (Timmons 2003, p267)

Timmons considers that the reasons for resistance are to be found at the interface between system design on one hand and nursing culture and practice on the other. This resonates with the findings in this project since it could be assumed that early nurse input into design should be developed to reflect and include nursing culture and practice (Hayward-Rowse & Whittle 2006), thus avoiding issues around professional judgement.

In a survey of nurses' perceptions of a computerised care plan in Taiwan, Lee (2005) found that some nurses expressed concern about losing their critical thinking ability, de-individualisation in content design, poor function and not being able to type or write about patient condition.

Indeed more detailed and comprehensive plans of care are only worthwhile if they truly influence patient care outcomes. (p351)

Barnard (1997) discusses the belief that technology is a neutral object and that nurses are its master. He critiques the nursing literature and finds that nurses fail to confront the belief that technology is a neutral object.

For many nurses technology may not be a neutral servant of their will, but a pervasive reality. A reality which modifies practice, politics, values and environment often without due recognition of the importance of the transformation. (p130)

It seems that, in 2007, nurses are retrospectively realising the many nursing practice and system design needs associated with what they experience in reality as a 'pervasive transformation'.

Griffith et al. (2002) investigated how proactively negotiating the developmental elements and implementation of a website affected subsequent usage by those involved. Whilst this was a small study undertaken in a management environment, they do note:

There is a potential danger here in that for the implementers to negotiate with [potential] users, they must be willing and able to introduce the negotiated concessions. Promising changes and then either renegeing or 'forgetting' would seem to have serious implications...Implementers who see changes as too costly

should avoid the negotiation approach, though negotiating early in the process might provide some organisational safeguards. Such changes would hopefully incur fewer costs from change orders etc. (p18)

## Theme 4

### **Lack of access to appropriate hardware and lack of 24/7 ICT support in the workplace, coupled with concerns about the reliability of ICT**

For the English key informants, this theme focused on access to information and not access to appropriate hardware in work places:

*Access to data was commented on especially around role-based access [RBAC] for the professional. Nurses will get access to the information they need and in relation to their own professional accountability. RBAC is frustrating regarding restriction on what someone will see, roles are confusing; currently, several different roles may require access to parts of the system. It will probably be beneficial if roles are accurately allocated; however it could be quite challenging.*

*Role-based access is going to be complex and could negate benefits of system of sharing information.*

Focus group participants, reflecting their frontline experiences in England, were more concerned about actual hands-on access in the work place.

*Yes, you must have access to computers; that in itself is maybe a concern that people don't have access to computers. You have to have a certain amount of time to access them and at least I'm more fortunate than most, I have more time than others. For nurses working clinically they won't have access to computers as easily as myself and they have to have email addresses as well so that takes up some time.*

*If we could just think again about the whole idea of computerisation is that it's meant to help us with our processes and to be more efficient...but if you're all queuing up for the same computer putting the same information on the computer it delays the process.*

*...the particular Trust I work with we've only just last year had actual computer access to our desktops but we were not utilising it for anything – we receive emails that's it...I can't go into the computer.*

This concern was linked with the need for 24/7 ICT technical support:

*So I think what needs to happen is the access to the computers, either at work or at home, but then there is the issue about what supports that, what supportive mechanism opportunities are there around that.*

*...in one practice a nurse said 'I don't have to do all of this. I think that if the computer goes wrong or something happens I don't know how to fix it, I know how to turn it on but even turning the computer off, I'm not sure'. What concerns [me] then is that if something actually goes wrong it actually has to go to be repaired (somehow) when we already have busy work schedules. That leads to frustration and irritation.*

*It's fantastic if the whole infrastructure is laid on to support the system but if it's not then it becomes a barrier.*

The report of the Nursix survey exposed the need for easy access to adequate computer hardware. Nurses still have to travel long distances to get access to a computer, or have to queue up on wards or in offices. Nurse respondents were concerned about the reliability of computers and wanted 24-hour technical support and backup.

In the Edinburgh workshop, key restrainers were noted as:

- 'Lack of hands-on access to hardware and appropriate tools';
- 'Lack of available 24/7 operational ICT support'.

In the Cardiff workshop, nurses noted a key need for effective nurse e-records as:

- 'Dedicated computers – ACCESS!!!'

The literature demonstrates similar issues:

- Lack of access or poor computer facilities for community nurses (Chan et al. 2004, McKenna et al. 2004);
- Easy access to ICT is key to usability (Russell & Alpay 2000, Kawamoto et al. 2005, Lee 2005, Nicholas et al. 2005, Rosenbloom et al. 2006);
- Dependability and ability to effectively resolve ICT problems is a key issue (Kirshbaum 2004);
- Technical support is noted by Treweek et al. (2000) as essential in developing a primary care-based electronic record in Norway. Interestingly, they found that the support enquiries generated by the GPs were not always strictly technical problems. Many wanted just

to double check or be talked through an implementation process. They also found that if technical support was not available out of hours, the practices tended to drop out, emphasising the 24/7 clinical need;

- Accepting and understanding the need to plan in advance for unplanned ICT downtime is increasingly being recognised as a critical clinical issue (Nelson 2007).

## Theme 5

### **Lack of education and training, or concern that education and training provided were not relevant/appropriate, coupled with worries that older nurses might be resistant to the use of ICT**

The key informants felt there was a shortfall in current education and educators, plus a need to visualise future learning needs:

*Health informatics has been removed from the curriculum. Teachers have limited knowledge and are unable to 'pass it on'.*

*We need to train people to use their analytical skills, to help them to assimilate information and analyse it in a number of different ways. Competency skills related to 'information handling' should be included in job descriptions as part of nursing.*

*We need new skills e.g. to access information in a home, to access equipment, need support system. More specialist roles – hospital will be more technical and the patient and nurse will be more technically focused.*

They included awareness of data, contracts and payment in the future:

*Education is required around understanding use of data e.g. in relationship to payment activity. Need to understand the wider purpose. Nursing has never been costed. Technology will be used for analysis and long-term support of patient care.*

For focus group respondents, there were three main issues:

- Training received from commercial companies

*A lot of the time the training is so commercially based that they don't take the users' needs into consideration and also time is limited to about a total of 15 minutes to learn a completely new system...I think that what actually happens is that they get trained and they're left to it but often they don't realise the*

*problems that you'll encounter until a few months after using the system and there's nobody else to say 'well these are the problems that we've had, what do we need to do to fix it'. They often have to figure it out themselves.*

*...from my experience...one person has the right training and then passes it down to other users but I'm not sure if that's the most effective way of doing it.*

*We had all new monitors put in by a big company and the training was all based specifically to time in with all of that. [Then] you didn't see them. All of a sudden they'd just gone and all of the troubleshooting happened afterwards.*

- Computer use training and associated support

*There is definitely a lack of training within the nursing field to use computers.*

*Well I've had no computer training. I've had to learn in the surgery on my own. I've just signed up for the European Computer Driving Licence, which our Trust is now providing for everybody. I find it impossible to find the time and I keep getting every three months a reminder saying, 'you haven't done your first part,' etc. We generally, I'm trying to get everyone within my team to sign up to it, and say, 'look, take half an hour, even if it's only half an hour a week,' but I don't think that Trusts actually acknowledge that this training is required.*

- The possibilities for e-learning and the associated needs

*...from the education point of view and new educational opportunities that might mean that more people from a nursing perspective continue with their personal professional development. They might be able to do it at home in the comfort of their homes, they wouldn't need to travel miles away to college from home to do academic work. There are lots of positives.*

*I think also the particular individual learning style you have, whether you are happy to learn on your own again and whether it is through, you know, the written word or through an electronic module that slots in and submitting assignments and whatever way suits some people but doesn't suit others, and so there is all of those constraints with it I think in the NHS.*

The RCN Nursix survey report notes that respondents highlighted the need for good training.

In the Cardiff workshop, the nurses noted there was a need to 'develop the content of this record as part of nursing practice development', thus indirectly the need for on-going education to develop the body of knowledge. In Edinburgh, one of the main restraining forces was felt likely to be linked to 'access/availability of education/learning opportunities'.

The fear that older nurses might be disadvantaged was similarly a constant theme:

*There are concerns for nurses, including older nurses, who are not computer literate.*

*This is a big change, younger people will be brought up with computers therefore it will not be so difficult for them.*

The literature demonstrates an awareness of this issue across many areas of UK practice, including practice nursing/primary care (Russell & Alpay 2000, See-Tai et al. 2000, Meal et al. 2004, Morris-Docker et al. 2004), primary/secondary interface (Werrett et al. 2001), student nurses/nurse teachers (Wishart & Ward 2002, Willmer 2005), nurse managers (Gould et al. 2001), community nurses (Chan et al. 2004), perioperative staff (Nicholas et al. 2005) and acute hospital EPR development (Kirshbaum 2004). It has similarly been recognised as an issue in the USA (Barr 2002, Kirshner et al. 2004) and in Taiwan (Lee 2005).

There are recurring themes within the literature that support the findings of this current project:

- Nurses recognise the need for and are keen to undertake relevant e-health learning and to actively develop their e-health practice underpinned by learning and research (Gould et al. 2001, Werrett et al. 2001, Chan et al. 2004, Kirshbaum 2004, Meal et al. 2004, Nicholas et al. 2005);
- The level of perceived quality, relevance and/or provision in reality of education, training and development is strongly related to subsequent actual developmental usage of the system/method by recipients of the learning. Relevance includes understanding the need to design relevant learning approaches for challenging areas such as across e-pathway interfaces (Getty et al. 1999, Russell & Alpay 2000, See-Tai et al. 2000, Werrett et al. 2001, Barr 2002, Kirshbaum 2004, Morris-Docker et al. 2004, Lee 2005, Mannan et al.

2006). Development not being seen as relevant to ways of working is also exposed in Timmons' (2003) work looking at why nurses resisted ICT implementation;

- Physical, hands-on access (or not) to a computer has a direct connection with the level of effective learning/engagement with e-learning (Chan et al. 2004, Morris-Docker et al. 2004, Nicholas et al. 2005);
- Pre-registration student nurse and teacher ICT learning and/or teaching needs require more investigation (Willmer 2005) and the complexity of the factors associated with these elements need to be recognised and further researched (Werrett et al. 2001, Wishart & Ward 2002, Ornes & Gassert 2007).

Whilst this project was largely associated with post-registration experiences, the literature demonstrates the shortfalls in both post-registration and pre-registration nursing arenas.

## Theme 6

### **Concerns about confidentiality, security of records and sharing information, coupled with fears about legal issues and professional accountability**

Key informants demonstrated awareness of potential issues:

*Confidentiality and sharing of data was felt by some of the interviewees as a professional debate that 'had not yet been aired' plus concerns that professional bodies are not doing much to support these subjects.*

*There is a belief that local protocols may be 'taken to task' and a risk of having sets of rules and regulations as more legal cases occur, complaints are made and to support performance.*

And vision of the possibilities:

*Data protection and confidentiality of the whole of the patient record was seen as becoming significantly better, especially with the facility to audit who accessed what.*

*Sharing of data and access to it both professionally and locally is likely to be clumsy at first but will become quicker and easier. There are learning curves to be climbed.*

In the focus groups, the frontline nurses were more concerned about patient need and individual experience to date:

An investigation of the emergent professional issues experienced by nurses when working in an e-health environment

*We have to resolve the issues around confidentiality and security.*

*I think the important bit is this need-to-know basis. I've got a code of professional conduct that tells me the things that I have to do and one of those is protect client confidential information. And that I've got a duty of care.*

*Can I make a point about this? I think we've got to look at it from the patients' point of view. I really do.*

The Scottish workshop attendees noted the 'need for policies and guidelines to aid the sharing of patient information across boundaries', whilst in Wales, where the nurses were particularly focusing on the needs for a nursing e-record, the key points were:

*That clients should be given the opportunity to determine levels of access to their own records.*

*That the client should have the opportunity to decide and record what is it that he/she wants the health service to know about them and that this should be valued.*

This project showed that, whilst nurses were able to see the gains for practice that electronic records could offer, they were also aware about issues of access, security and confidentiality of records, and the need to involve the client and carers in decisions relating to all elements of their health records. This was predominantly seen by nurses as a professional accountability consideration to be visualised within a pathway of care as opposed to an isolated legal issue (Lee 2005).

All of the issues identified by the nurses can be found within the literature where there is recognition that access to information in e-records will help to eliminate fragmentation in care. However, there is a need to build systems and standards that address patient rights to privacy and these systems should have a level of patient control (Pouloudi 1997, Anderson 2000, Mandl et al. 2001).

Alpert (2003), looking at the privacy of e-records (including genetic information), concludes that as long as clients feel obliged to protect their privacy, the health of the health system itself is challenged. Therefore, there is a need for all stakeholders to come together to design standardised policies to manage this issue (Adams et al. 2004, Agrawal & Johnson 2007), including secondary user access (Anderson 2000), to

recognise the need for true patient empowerment (Ueckert et al. 2003) and to include research that recognises both the ethical issues involved (Pouloudi 1997) and the need for informed consent to e-research (Willison et al. 2003).

There are additional elements added by Kluge (2004), who interestingly considers the link between security and recording informed consent in the e-record, and Bardram (2005), who recognises the 'nomadic' and co-operative element of healthcare professionals' care and the need for log-in access methods to facilitate this mobility whilst remaining secure.

## Theme 7

### **Fear that computerised systems will take nurses from direct patient care, would take more time and could cause duplication, coupled with the fear or experience of computerised records not reflecting nursing, not being client-centred and not reflecting clients' wishes**

Some key informants felt that this computerised change to practice was something nursing had to accept and manage as an almost inevitable happening:

*Nurses are used to planning and delivering care, and may be task orientated. They are not used to using large amounts of information to direct care.*

*Patients accessing their records and dealing with the informed patient will become increasingly challenging, scary and especially if you don't know something and they are expecting you to be an expert. Feelings of inadequacy and being not good enough, together with concern and feeling threatened may result for the professional.*

This sentiment was not revealed in any of the other project groups. Instead, in the English groups especially, there were many strong feelings about nursing, particularly 'nursing' focused on the client, being lost:

*...certainly a lot of our clients haven't got the access [or] if they're unwell, they haven't got the capability to use a computer and look up that information...*

*My concern again would be about communication with the patient during the consultations and I do think that computers can sometimes get in the way. (English Focus Groups)*

There was also a willingness to develop the e-record as part of nursing given the opportunity:

An investigation of the emergent professional issues experienced by nurses when working in an e-health environment

*Willingness to develop the content of this record as part of 'nursing'/practice development. (Cardiff Workshop)*

But that the current record does not reflect nursing or the client:

*Current record appears to be medically dominated. It is not perceived that records/data which result from current approaches reflect nursing or importantly the client. (Cardiff)*

*...what we do at the face is perhaps not being met by the applications that are being rolled out at the moment. (English Focus Groups)*

Interestingly, for those in England, the discussion around recognition of nurse input into the e-record was often linked to anxieties around replacement of nurses by other healthcare workers, underpinned by the software:

*More specialist roles – hospital will be more technical and the patient and nurse will be more technically focused. Healthcare assistants will be trained to undertake many nursing jobs.*

*We are in danger of losing nursing skills – the art of nursing – tacit knowledge.*

*There is a danger that IT will make us do things differently.*  
(Key Informants)

*...a few nurses were not very happy with the fact that nursing assistants were actually helping them to use the system...The nurses were concerned because they said 'well, it's all good and well that there's somebody helping us but they don't actually understand the conditions'. They might not actually understand that, yes you might get this, but you might need to check on something else. So there is a concern that [the nurses will] actually have to be doing twice the work because they actually have to be double checking what the nursing assistant actually found out, to find if there are any other symptoms. (English Focus Groups)*

There was also awareness that this might take more time and thus lessen time available for direct patient care.

In the Nursix survey, nurses were worried that computerised record systems will take them away from their patients and direct patient care,

and some feared that it will be more time-consuming than paper record keeping.

*...there is also the way in which that change is introduced is seen as top down imposed rather than we actually want this tool to be something for us and the classic thing of the integration of a new technology, whatever new technology, makes it harder, it takes longer to do the same task that you used to do without the technology... (Focus Groups)*

The overwhelming issue for nurses everywhere though was the link between a nursing record and ensuring the clients' needs and their rights to input as individuals were recognised, respected and valued. For example:

*By being informed, patients will be in a better position; it has to be good. They will become more engaged with care. (Key Informant)*

*That the client should have the opportunity to decide and record what is it that he/she wants the health service to know about them and that this should be valued. (Cardiff Workshop)*

*[E-health] offers a lot but [there is] also the fact that everybody will have a different view about it in terms of patients being able to access that information.*

*What is useful is that you have got a system there where the outcome for your client is recorded. That's the most important thing. (English Focus Groups)*

*There is a need to record qualitative data which reflects client needs and outcomes.*

*Recognition that there needs to be client-centred information in the e-record.*

*That client-centred information is an essential element in a health record from a nursing perspective. Recognition that this information requires radical new levels of client involvement, recognising and respecting the wishes of individuals. (Cardiff Workshop)*

The issues exposed by the nurses in this project are strongly reflected in the literature, much of which is not directly generated by nurses yet

interestingly still reflects the key 'nursing' elements above. The most dominant of these elements include:

- The need for patient involvement in and access to their own individualised e-records (Delbanco et al. 2001, Mandl et al. 2001, Staggers et al. 2001, Beun 2003, Ueckert et al. 2003, Adams et al. 2004, Ralston et al. 2004), that they are willing to proactively engage with and input into their own e-records (Jones et al. 1999, Delbanco et al. 2001, Pagliari et al. 2003, Ueckert et al. 2003, Harrison & Lee 2006), and that they consent to their use for research (Willison et al. 2003);
- Awareness of the time requirement/element when computerised care options are introduced (Aydin et al. 1998, See-Tai et al. 2000, Treweek et al. 2000, Clemmer 2004, Likourezos et al. 2004, Lee 2005, Kawamoto et al. 2005, Rosenbloom et al. 2006, Dorr et al. 2007) recognising that patient involvement in registration can reduce clinician time (Cauldwell et al. 2007);
- Recognition that there needs to be structured language in records (RCN 2006c, 2006d, Wallis 2007) but that there are issues around true reflection of care associated with this (Tornvall et al. 2004, Walsh 2004) and that this is an area that would benefit from collaborative research (Agrawal & Johnson 2007);
- Recognition of the unique privacy and consent situation in home tele-care options (Marziali et al. 2005);
- The need to develop systems with all stakeholders and developers (Delbanco et al. 2001, Ralston et al. 2004, Tornvall et al. 2004, Hayward-Rowse & Whittle 2006, Martin et al. 2007) and that this level of autonomous involvement by nurses requires the further strengthening of nurses' 'professional identity' (Tornvall et al. 2004) as has been known for some time:

Sophisticated understanding of the process of the consultation is required to support design making, it has been rightly pointed out that systems (like aviation design) do not develop via the randomised trial and that an iterative development and assessment programme...is needed. (Delaney et al. 1999, p3)

- The need for further primary and secondary research into nursing records and the associated issues (Urquhart & Currell 2005).

## Theme 8

### **Fear that computerised data might be used for monitoring workload and/or performance management**

This element of control/monitoring was most clearly articulated by nurses from England. For key informants, it was mostly a future possibility to be aware of:

*We are moving into an 'unknown' area, NHS Direct, e.g. has caused deskilling of some traditional skills and instead requires decision making skills and people skills to 'maintain contact and rapport'. Must use the computer and its advice not the nurse's instinct and what experience tells them. There could be a conflict.*

*...the audit process may give a 'Big Brother' feel, and that nurses should be supported with the expectation of audit and system management of information as part of the healthcare process.*

*Ethically we need to question what professionals are collecting information to be used for. Is it for care or for healthcare programmes?*

For nurses in the English focus groups, awareness was based more on experience in practice:

*I'm going to have to put into a computer where I've been, how long I've spent with somebody...What it doesn't ask me is how long I spend doing paperwork or inputting...the bigger part of my week is actually inputting the stuff, doing my letters, all of my admin but the system isn't asking me for that.*

*– I guess you feel that a bit Big Brotherish...?*

*Yes absolutely.*

*They do not want all the other things I do in a day...They're not asking for any of that. Where I am at what time, who I'm seeing – that's all they want to know. It's what they want not what you need to do your job properly. They're choosing something to meet some target which isn't client-driven.*

*The other thing really interesting in critical care was in data which is all about payment by results. That was another piece of software that will be introduced shortly. I suppose that's why you have ICPs [integrated care pathways] that you fill in that's all about including the severity of the patient's illness. If people forgot to fill that in then that would affect our funding...*

Indirectly, therefore, there was a perception of a tension between central structure and standards and the need for professional judgement; a tension between control and freedom and the associated issue of recognising professionalism. This was articulated in all areas, not just England:

*Structured data was identified by some as being supportive of the mathematical logical philosophy, not an 'artistic' approach. The structured approach was seen as a set of 'activities' that person requires – it is trying to make it a 'mathematical process' and formalised structure, we need to 'prove we are a profession'. (Key Informants)*

*Then it is about 'what is the purpose, what can I get out of this that is actually going to enhance what I do' rather than being data entry clerks for a manager who is doing their annual report or their finance report or whatever that can talk about bed occupancy rates or something like that and the targets and the star rating things. [It] is sometimes seen as 'oh well we are only doing this because we have got to tick the boxes and we have got a target-driven culture'. If the IT comes in at the same time as the target-driven culture it is seen as meeting the target rather than enhancing what we actually do for patients and clients. (English Focus Groups)*

*[The record] should be client-driven, what the client needs, what I'm accessing, what I'm giving to the client, how I'm doing it. (English Focus Groups)*

*Exposure of the tension between central standardisation and the requirements of professional judgement.*

*Recognition of the need for minimal levels of central standardisation which of itself must be subject to on-going development as the needs of client-centred health care emerge. (Cardiff Workshop)*

*Standing of nursing within society. (Edinburgh Workshop)*

Whilst there is little nursing-generated literature relating to this 'computerised performance management' (CPM) element, it is especially well established and investigated in work looking at computerised call centres and the culture associated with these services. The key issues exposed include:

- How CPM should be introduced and how managers should involve and engage staff appropriately in the method (Aiello & Svec 1993, Miozzo & Ramirez 2003, Alder & Ambrose 2005);
- How nursing staff/others are often not engaged in the method and thus perceive it as a pervasive worry (Aydin et al. 1998) or that the lack of involvement actually affects the care process (Collin-Jacques & Smith 2005);

- Articulation in health literature of 'covert monitoring' of performance (Raz & Blank 2007), technical monitoring for deviation from algorithms (Collin-Jacques & Smith 2005) and associated issues around professionalism and professional autonomy (Larsen 2005, Raz & Blank 2007):

...the relationship between a system that enforces thoroughness and aids gathering information for a diagnosis and the stress clinicians may feel from the uncertainty inherent in patient care. (Aydin et al. 1998, p71)

- How effort should be transferred into monitoring the effect of ICT on outcomes for clients (Kendrick et al. 2007) and ensuring that nursing indicators within the e-records adequately support quality monitoring that nurses would buy into (Casey et al. 2006) which are easily accessible (Watterson 2007);
- Recognition that professional judgement will always be required:

...this reflects the nurses' perceptions of professionalism and concepts of 'holistic nursing'...It is not, however, simply a matter of choice as to whether CAS should strictly control the nurse/caller interaction or should be used as a tool which supports their preferred ways of working. For no matter how sophisticated CAS algorithms become, they will never cover the vast range of contingencies that confront nurses as they deal with particular cases or replicate the tacit practices and knowledge that experienced nurses use and rely upon... (Greatbach et al. 2005, p827)

## Theme 9

### **Lack of an effective, independent, professional voice on e-health issues on behalf of nursing**

It could be argued that all the themed issues above reflect the lack of this element. However, it was only directly noted by participants in England:

*There were a few comments about legal issues and ethical issues being debated at higher levels. Concerns that professional bodies are not doing much to support these subjects. The profession as a whole was thought to not understand fully the activity going on within e-health. (Key Informants)*

*I suppose it's making nurses more politically aware but a lot of nurses aren't. (Focus Groups)*

*[The RCN and RCM] should be there speaking for their paid members and they should be knocking on the doors of the ministers and so forth. Every opportunity they get, every committee, the media you name it, to raise the profile and to tackle the contentious issues and have regular meetings with the Secretary of State for Health and so forth and it has to be very high level and it has to be a never-ending campaign on this crusade. (Focus Groups)*

*I also think there is an organisational culture issue that people are very anxious about expressing views that their job and their mortgage might then be on the line because they have expressed those views and I know this is sort of working within the RCN etc. I think the RCN is actually part of that culture and is less willing to challenge than perhaps it should be, maybe it will change...but maybe not. (Focus Groups)*

Sometimes more generally, but nonetheless connected, focus group attendees were trying to understand why nurses themselves are not able to do very much as individuals:

*...at the moment I can see it might be a bit of a struggle to feel empowered in the NHS...a lot of cost-cutting and saving so nurses might not feel that motivated to be empowered. They might just feel like coming in, doing their work and then going home again. Also there's a lot of fear for their jobs as well.*

*We should be more proactive rather than sitting saying no this is wrong.*

*– That's because you're not given the choice most of the time? It probably is but we need to be more focused don't we? Perhaps we haven't had the confidence; we've allowed something to be applied to our profession with minimal involvement.*

*I think that when you're working for an acute Trust or a big organisation you're more anonymous.*

*Essentially I have had no influence in critical care [into] something that's being implemented. (English Focus Groups)*

*There were thoughts that nurses need to position themselves, acquire knowledge and understanding to be able to be proactive, define and prescribe their future path. (Key Informants)*

There seems to be confusion over who 'leads' nursing, who speaks for nursing. The literature is full of references to nurse leaders and nurse champions, but there is no reference to how these people are independently supported to autonomously articulate the e-health needs of nurses and their clients and families. The RCN document *Defining Nursing* (2003) states:

The ability of nursing to respond to people's need for nursing within the rapidly changing environment of health care ...fundamentally depends upon the way in which nursing itself is defined. (RCN 2003, p4)

Also:

The International Council of Nurses makes it clear that national nursing organisations bear the responsibility for defining nursing and nurses' roles that are...relevant to their nation's healthcare needs. (RCN 2003, p3)

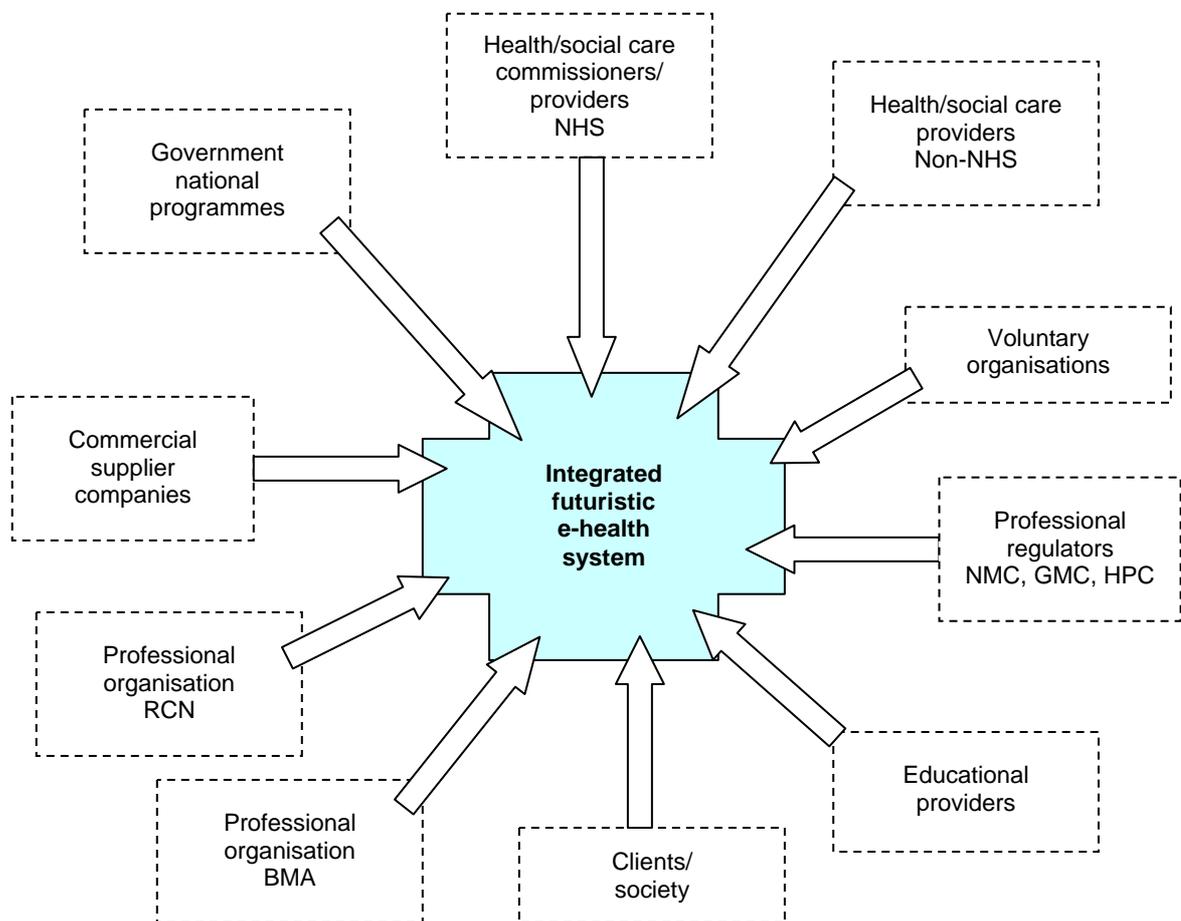
It would be difficult to find an area of more rapid, continuously developing expansion than that of e-health. It follows that it must be an area of priority for the formation of a professional voice for nursing, both nationally and internationally. The issues being experienced by nurses within the themes above can only add weight to this claim.

## 5.0 Conclusions

The key finding of this project is that there is a huge gap between the e-health future as envisaged by the policy leaders and the current experience of frontline nurses. It is also clear that reducing this gap will require action by many different stakeholders, and that such action will require significant changes in the mindsets of some of them.

Figure 5.1 presents an 'accountability wheel' as a way of identifying the different stakeholders and their particular responsibilities.

**Figure 5.1. Bridging the reality gap: the accountability wheel**



Once the various stakeholders are identified, a second issue is the influence that each stakeholder exerts. Using this model as a basis, readers might consider the following questions:

- In your area of the UK, which of the arrows would you consider to dominate the existing local position on e-health? Which stakeholders are the most powerful or influential in your local area? Which are the least powerful or influential?

- Are there any stakeholders missing from this model?
- Does any imbalance in the power or influence exerted by any particular stakeholder affect the system's ability to address the issues identified by this project or to achieve the integrated vision?

The issues identified by the nurse respondents across all areas of this project illustrate and emphasise several factors that are essential to the successful integration of ICT into UK health care in the 21st century:

- In any environment, ICT supports and 'joins up' processes across boundaries. It inevitably exposes shortfalls in existing integration. If these existing cross-boundary shortfalls are not first addressed as problems in their own right, ICT alone cannot solve them.
- The same principle applies to the nurse's experience: although interconnected, each of the issues identified requires study and action in its own right. Examples include the development of care pathways across social/health boundaries, the balance between computerised performance monitoring and professional judgement, and many more.
- These difficulties are a major contributory factor in the experienced reality gap. There is a need to recognise, accept and plan for this and to understand that this planning will require everyone (including commercial suppliers and patients/clients) within the whole health/social system to investigate and collaboratively develop new methods and approaches.
- Everyone agrees that the appropriate use of e-health has the potential to achieve great benefits; but there is a need to move from 'rosy blue sky picturing' of the future to accepting that there are substantial barriers. There is also a desperate need to recognise, articulate and address these issues to enable the vision to become reality. It is quite possible that, by admitting the issues openly and attempting to address them, ICT programme leads and other stakeholders will gain new buy in from frontline nurses and others.

## 5.1 Mindset Challenges

Each of the relevant stakeholders illustrated in the accountability wheel carries an interconnected responsibility for innovative action to meet the gaps exposed by this project. We suggest that integrated, whole system-based action first requires a change in the prevailing mindset. We therefore present the mindset challenges associated with each theme followed in section 5.2 by the associated actions that are required.

## Government and health/social care providers: mindset challenges

<p><b>Issue One: Strategic gap</b></p>	<ul style="list-style-type: none"> <li>• Understand that nurses support, at least in principle, the e-health vision.</li> <li>• Recognise and address the gap between political/central vision and the day-to-day reality experienced by frontline nurses.</li> </ul>
<p><b>Issue Two: Lack of integration across health/social care</b></p>	<ul style="list-style-type: none"> <li>• Recognise that this integration requirement needs: <ul style="list-style-type: none"> <li>– addressing</li> <li>– designing out</li> <li>– incentives for providers</li> <li>– win-win costing/funding streams established across health/social care</li> </ul> </li> </ul> <p>before (but as a last option, alongside) the implementation of ICT systems, otherwise all that is generated is disillusionment and extra work as ICT inevitably exposes the problems.</p>
<p><b>Issue Three: Lack of nurse input into design – problems with standardisation versus professional judgement</b></p>	<ul style="list-style-type: none"> <li>• Recognise that ICT is about people not the imposition of technology as a ‘solution’.</li> <li>• Recognise that neither political edict nor any single health/social care organisation can solve this on their own – it needs innovative collaboration.</li> </ul>
<p><b>Issue Four: Lack of access to hardware or 24/7 support</b></p>	<ul style="list-style-type: none"> <li>• Recognise that effective 24/7 support is essential.</li> <li>• Recognise that there is no point in investing in ICT if access to appropriate hardware and 24/7 support is not funded.</li> <li>• Accept that this problem exists and is very real for frontline users.</li> </ul>
<p><b>Issue Five: Lack of training and education</b></p>	<ul style="list-style-type: none"> <li>• Acknowledge the difference between training provided by a commercial company to use a system and the education required for practice and practice development.</li> <li>• Accept the continuous need for education, training and practice development, both for individual users and for the provider organisations.</li> </ul>
<p><b>Issue Six: Concerns about confidentiality and professional accountability</b></p>	<ul style="list-style-type: none"> <li>• Value and respect the ethical and legal worries that touch everyone, either as a member of a society or as an accountable professional.</li> <li>• Recognise the need to fund and support the development of best practice guidance, policy and statute.</li> </ul>
<p><b>Issue Seven: Fear about being taken away from direct patient care and of duplication</b></p>	<ul style="list-style-type: none"> <li>• Accept that there is a possibility that this might happen if development in the operational environment/associated e-record is not representative of nursing.</li> <li>• Visualise the effective care process information shortfall for commissioners that will ensue if nursing is invisible in e-records.</li> </ul>
<p><b>Issue Eight: Fear about computerised monitoring/performance management</b></p>	<ul style="list-style-type: none"> <li>• Recognise nurses’ fears of misuse of data for performance management.</li> </ul>
<p><b>Issue Nine: Lack of an effective voice on behalf of nursing</b></p>	<ul style="list-style-type: none"> <li>• Recognise the need for and value of independent expert professional nursing advice on e-health issues, remembering that nurses are the largest group of end users of information systems.</li> <li>• Acknowledge the extensive evidence from other countries which illustrates the difficulties encountered if nurses are not adequately involved in system design and implementation.</li> </ul>

## Commercial suppliers: mindset challenges

<p><b>Issue One: Strategic gap</b></p>	<ul style="list-style-type: none"> <li>• Recognise the gap between purchaser-generated contracts, supplier agreements and end user frontline experience.</li> <li>• Understand how this gap affects the roll-out/use and the relevance and popularity of their product long term.</li> <li>• Recognise that early working with nurses and educational providers would be of benefit for everyone.</li> </ul>
<p><b>Issue Two: Lack of integration across health/social care</b></p>	<ul style="list-style-type: none"> <li>• Proactively negotiate this element with purchasers and professional/ educational organisations as part of the development and pre-implementation process, ensuring that purchasers plan this essential element in too.</li> </ul>
<p><b>Issue Three: Lack of nurse input into design – problems with standardisation versus professional judgement</b></p>	<ul style="list-style-type: none"> <li>• Recognise the value of independent nursing advice early in the design and continuously through on-going development of their products.</li> <li>• Recognise that use of ICT within the NHS will inevitably involve nurses, as the largest group of users, in the use and evaluation of their product.</li> <li>• Recognise that involving nurses in product design and development is an obvious R&amp;D win-win</li> </ul>
<p><b>Issue Four: Lack of access to hardware or 24/7 support</b></p>	<ul style="list-style-type: none"> <li>• Recognise that this level of support is essential in health care, and that inadequacies in this area are major restrainers for their product. It is not in a commercial company's interests to have poor support for their product 'designed in'.</li> </ul>
<p><b>Issue Five: Lack of training and education</b></p>	<ul style="list-style-type: none"> <li>• Understand that providing education and training is of benefit to companies as well as users.</li> </ul>
<p><b>Issue Six: Concerns about confidentiality and professional accountability</b></p>	<ul style="list-style-type: none"> <li>• Acknowledge that this problem indirectly affects the product and requires 'design in' time.</li> </ul>
<p><b>Issue Seven: Fear about being taken away from direct patient care and of duplication</b></p>	<ul style="list-style-type: none"> <li>• Recognise that systems must support and reflect nursing practice and minimise time spent on documentation.</li> <li>• Developing ICT systems and 'kit' with nurses and other users must be of benefit to commercial suppliers. There can be no 'win' for equipment that is operationalised in a manner which nurses do not find useful or which results in duplication.</li> </ul>
<p><b>Issue Eight: Fear about computerised monitoring/performance management</b></p>	<ul style="list-style-type: none"> <li>• It is not in the interest of commercial suppliers to have their systems associated with poor human resources practice.</li> </ul>
<p><b>Issue Nine: Lack of an effective voice on behalf of nursing</b></p>	<ul style="list-style-type: none"> <li>• Recognise the need for and value of independent expert professional nursing advice on e-health issues, remembering that nurses are the largest group of end users of information systems.</li> <li>• Visualise the massive possibilities for developing effective, internationally marketable solutions – by working with international, independent nursing bodies.</li> </ul>

## Professional regulators: mindset challenges

<p><b>Issue One: Strategic gap</b></p>	<ul style="list-style-type: none"> <li>• Acknowledge that a gap exists and understand the dilemma that individual nurses find themselves in when regulatory body guidance is issued yet nurses have little or no say in what ICT is delivered and/or how it is implemented at operational level.</li> <li>• Recognise that a similar dilemma occurs when no NMC guidance is offered.</li> </ul>
<p><b>Issue Two: Lack of integration across health/social care</b></p>	<ul style="list-style-type: none"> <li>• Expressly articulate how important effective operational cross-boundary connectivity and formalised referral systems are for the protection of the public by registrants.</li> </ul>
<p><b>Issue Three: Lack of nurse input into design – problems with standardisation versus professional judgement</b></p>	<ul style="list-style-type: none"> <li>• Recognise the tension caused for the lone registrant when their code directly conflicts with operational ICT methods/employer permitted scope.</li> <li>• Recognise the powerful provider role in establishing the local method of day-to-day ICT usage. Whatever the NMC ‘rules’ say, nurses have to operate within the real time provider environment.</li> </ul>
<p><b>Issue Four: Lack of access to hardware or 24/7 support</b></p>	<ul style="list-style-type: none"> <li>• Recognise the need to protect the public when unplanned crashes occur and registrants are left without access to notes or information systems. Such operational shortfalls affect registrants’ ability to meet NMC codes.</li> <li>• This is a cross-stakeholder issue and needs collaborative best practice agreements.</li> </ul>
<p><b>Issue Five: Lack of training and education</b></p>	<ul style="list-style-type: none"> <li>• Recognise that e-health is an integral part of nursing practice to be regulated in the same way as other aspects of nursing practice in order to protect the public.</li> </ul>
<p><b>Issue Six: Concerns about confidentiality and professional accountability</b></p>	<ul style="list-style-type: none"> <li>• Recognise responsibility/need to get involved on behalf of registrants at all levels: <ul style="list-style-type: none"> <li>– Government/providers</li> <li>– Suppliers</li> <li>– Professional organisations</li> <li>– Educational requirements.</li> </ul> </li> </ul>
<p><b>Issue Seven: Fear about being taken away from direct patient care and of duplication</b></p>	<ul style="list-style-type: none"> <li>• Recognise the effects of shortage of time on the ability of registrants to deliver high quality care.</li> </ul>
<p><b>Issue Eight: Fear about computerised monitoring/performance management</b></p>	<ul style="list-style-type: none"> <li>• NMC should be interested where rigid monitoring by provider management inhibits the accountable delivery of professional judgement.</li> </ul>
<p><b>Issue Nine: Lack of an effective voice on behalf of nursing</b></p>	<ul style="list-style-type: none"> <li>• Recognise that lack of independent professional advice in the development of systems is not in the interest of public protection.</li> </ul>

## Professional organisations (e.g. RCN): mindset challenges

<p><b>Issue One: Strategic gap</b></p>	<ul style="list-style-type: none"> <li>Recognise the dilemma nurses find themselves in when their operational ICT reality becomes professionally challenging and they require powerful independent support/advice – both professionally and in relation to terms and conditions.</li> <li>Recognise that these dilemmas and the need for advice are constantly emerging in technology related areas. This is an on-going need.</li> </ul>
<p><b>Issue Two: Lack of integration across health/social care</b></p>	<ul style="list-style-type: none"> <li>Recognise the continuously emerging professional issues that affect all autonomously accountable individual health professionals.</li> <li>Professions should be united in intent but focused on the art/science of their own discipline and be willing to openly account for their own profession's methods and recommendations.</li> </ul>
<p><b>Issue Three: Lack of nurse input into design – problems with standardisation versus professional judgement</b></p>	<ul style="list-style-type: none"> <li>Understand the continuously emerging professional issues that result from inadequate nurse involvement in the design, implementation and development of systems.</li> <li>As in issue two, professions should be united in intent but focused on the art/science of their own discipline and be willing to openly account for their own professions' methods and recommendations.</li> </ul>
<p><b>Issue Four: Lack of access to hardware or 24/7 support</b></p>	<ul style="list-style-type: none"> <li>Acknowledge this area as a substantial current professional issue for nurses in many areas.</li> </ul>
<p><b>Issue Five: Lack of training and education</b></p>	<ul style="list-style-type: none"> <li>Recognise that e-health is an integral part of nursing practice, not an 'add on' technical skill, and that it affects the practice of all nurses at all levels in every field of practice.</li> <li>Investigate, articulate and lobby for the complex education, training and development (ETD) elements that individually accountable nurses need, recognising that this e-health need spans all areas of traditional RCN work.</li> </ul>
<p><b>Issue Six: Concerns about confidentiality and professional accountability</b></p>	<ul style="list-style-type: none"> <li>Recognise members' needs for guidance and support.</li> </ul>
<p><b>Issue Seven: Fear about being taken away from direct patient care and of duplication</b></p>	<ul style="list-style-type: none"> <li>Recognise the effects of shortage of time on the ability of nurses to deliver high-quality care. Education and development could include teaching around best practice plus research and evaluation, with constant improvement of methods and, which are published to avoid wheel re-invention.</li> <li>Recognise that systems must support nursing practice and minimise time spent on documentation.</li> </ul>
<p><b>Issue Eight: Fear about computerised monitoring/performance management</b></p>	<ul style="list-style-type: none"> <li>Recognise that inappropriate use of data for performance management may inhibit professional judgement and lead to labour relations problems.</li> </ul>
<p><b>Issue Nine: Lack of an effective voice on behalf of nursing</b></p>	<ul style="list-style-type: none"> <li>Recognise the need for independent expert nursing advice on e-health issues.</li> <li>As 'the voice of professional nursing' in the UK, accept a leadership role.</li> </ul>

## Educational providers: mindset challenges

<p><b>Issue One: Strategic gap</b></p>	<ul style="list-style-type: none"> <li>• Recognise the gap that the current model produces, e.g. the inability of university-based nurse educators to access the ICT kit that is to be rolled out means that:             <ul style="list-style-type: none"> <li>- Students cannot be taught about it or investigate it independently;</li> <li>- Academic staff themselves never see, use or research it.</li> </ul> </li> </ul>
<p><b>Issue Two: Lack of integration across health/social care</b></p>	<ul style="list-style-type: none"> <li>• Recognise and actively articulate that there is nothing education can do about this without the point above being addressed.</li> </ul>
<p><b>Issue Three: Lack of nurse input into design – problems with standardisation versus professional judgement</b></p>	<ul style="list-style-type: none"> <li>• The points in relation to issue one above result in education having no proactive role in relation to this issue: all education can do is to research issues after the event.</li> </ul>
<p><b>Issue Four: Lack of access to hardware or 24/7 support</b></p>	<ul style="list-style-type: none"> <li>• Similar access and support problems exist in education. Ignoring this problem will not solve it.</li> <li>• Education needs to be included as soon as possible.</li> </ul>
<p><b>Issue Five: Lack of training and education</b></p>	<ul style="list-style-type: none"> <li>• Recognise that the proper use of ICT depends on an understanding of and skills in decision-making rather than on simple computer skills and computer literacy.</li> </ul>
<p><b>Issue Six: Concerns about confidentiality and professional accountability</b></p>	<ul style="list-style-type: none"> <li>• Recognise the relevance of these issues to all aspects of nursing practice.</li> </ul>
<p><b>Issue Seven: Fear about being taken away from direct patient care and of duplication</b></p>	<ul style="list-style-type: none"> <li>• Education and development could include teaching around best practice plus research and evaluation, with constant improvement of methods and systems which are published to avoid wheel re-invention.</li> </ul>
<p><b>Issue Eight: Fear about computerised monitoring/performance management</b></p>	<ul style="list-style-type: none"> <li>• Recognise nurses' fears of misuse of data for performance management. Ensure that research data are used only for legitimate purposes.</li> </ul>
<p><b>Issue Nine: Lack of an effective voice on behalf of nursing</b></p>	<ul style="list-style-type: none"> <li>• Education needs to be involved and in partnership with this in every area.</li> </ul>

## 5.2 Actions that Follow from Mindset Challenges

The actions associated with acceptance of the mindset challenges above are now offered in a similar tabular, interconnected form.

### Government and health/social care providers: actions

<b>Issue One: Strategic gap</b>	<ul style="list-style-type: none"> <li>Focus on removing the restrainers instead of continuously promoting 'visionary' drivers and 'good news'.</li> </ul>
<b>Issue Two: Lack of integration across health/social care</b>	<ul style="list-style-type: none"> <li>See issue one: enabling the whole system to 'design out' this major inhibitory issue is a key strategic need.</li> <li>Recognise that imposition from/by the centre is unlikely to be an effective solution.</li> </ul>
<b>Issue Three: Lack of nurse input into design – problems with standardisation versus professional judgement</b>	<ul style="list-style-type: none"> <li>Recognise cross-boundary practice development as a key area for supporting action research. This should be facilitated as a key strategic e-health success factor.</li> </ul>
<b>Issue Four: Lack of access to hardware or 24/7 support</b>	<ul style="list-style-type: none"> <li>Ensure that funding includes these elements.</li> <li>Work with professional bodies, educational providers and suppliers to develop innovative solutions.</li> </ul>
<b>Issue Five: Lack of training and education</b>	<ul style="list-style-type: none"> <li>Ensure the inclusion of e-health in contract specifications for all educational programmes, both at pre-registration level and in all CPD programmes.</li> </ul>
<b>Issue Six: Concerns about confidentiality and professional accountability</b>	<ul style="list-style-type: none"> <li>Enable an independent accreditation process as part of strategic planning, to accredit for example clinical assessments and patient record content for clinical use.</li> </ul>
<b>Issue Seven: Fear about being taken away from direct patient care and of duplication</b>	<ul style="list-style-type: none"> <li>There is a strategic need to ensure that all elements of care delivered are truly reflected in records to produce effective local system outcomes. 'Invisibility' of nursing needs accepting and investigating.</li> </ul>
<b>Issue Eight: Fear about computerised monitoring/performance management</b>	<ul style="list-style-type: none"> <li>Ensure that data are not misused for controlling nursing practice.</li> <li>Ensure best practice in human resource management.</li> </ul>
<b>Issue Nine: Lack of an effective voice on behalf of nursing</b>	<ul style="list-style-type: none"> <li>Encourage and support (including financial support) independent professional advice.</li> </ul>

## Commercial suppliers: actions

<b>Issue One: Strategic gap</b>	<ul style="list-style-type: none"> <li>Formally recognise the need for innovative, strategic, collaborative win-win approaches with <i>all</i> stakeholders, especially frontline nurses and educational providers.</li> </ul>
<b>Issue Two: Lack of integration across health/social care</b>	<ul style="list-style-type: none"> <li>Within commercial companies' contract methodology, consider the need for inclusion of key 'success' factors as part of the agreement. This includes organisational development needs outside the remit of ICT.</li> </ul>
<b>Issue Three: Lack of nurse input into design – problems with standardisation versus professional judgement</b>	<ul style="list-style-type: none"> <li>Involve nurses in the design as well as delivery of systems.</li> <li>Forge on-going links with educational providers and professional bodies to support practice-product development.</li> </ul>
<b>Issue Four: Lack of access to hardware or 24/7 support</b>	<ul style="list-style-type: none"> <li>Seek innovative win-win solutions with all stakeholders.</li> </ul>
<b>Issue Five: Lack of training and education</b>	<ul style="list-style-type: none"> <li>Link commercial training with education by using innovative solutions.</li> <li>Recognise that on-going critical evaluation and development of systems by nurses and nursing will be a huge marketing and development gain.</li> </ul>
<b>Issue Six: Concerns about confidentiality and professional accountability</b>	<ul style="list-style-type: none"> <li>Become involved in the process early, as a stakeholder.</li> </ul>
<b>Issue Seven: Fear about being taken away from direct patient care and of duplication</b>	<ul style="list-style-type: none"> <li>The avoidance of duplication and the creation of effective products that truly reflect patient-centred care are key market needs. This requires on-going multi-stakeholder development.</li> </ul>
<b>Issue Eight: Fear about computerised monitoring/performance management</b>	<ul style="list-style-type: none"> <li>Proactively develop system functions that support best practice monitoring for development and learning as opposed to performance management.</li> </ul>
<b>Issue Nine: Lack of an effective voice on behalf of nursing</b>	<ul style="list-style-type: none"> <li>Involving nursing independently – along with other key stakeholders – in the evolution of effective products has to be a key commercial strategy.</li> </ul>

## Professional regulators: actions

<b>Issue One: Strategic gap</b>	<ul style="list-style-type: none"> <li>Support and enable nurses to argue for the integrated needs (both organisational and clinical) that will minimise the risk to the public posed by gaps in the healthcare system anywhere in the UK.</li> </ul>
<b>Issue Two: Lack of integration across health/social care</b>	<ul style="list-style-type: none"> <li>Give individual registrants powerful regulatory backing to argue for what is needed.</li> </ul>
<b>Issue Three: Lack of nurse input into design – problems with standardisation versus professional judgement</b>	<ul style="list-style-type: none"> <li>Give individual registrants powerful regulatory backing to support the recommendations of individuals in practice.</li> </ul>
<b>Issue Four: Lack of access to hardware or 24/7 support</b>	<ul style="list-style-type: none"> <li>Ensure that guidance covers these risks.</li> </ul>
<b>Issue Five: Lack of training and education</b>	<ul style="list-style-type: none"> <li>Provide appropriate and timely guidance on the use of ICT and ensure that this is included in pre-registration education and continuing professional development.</li> <li>Give individual registrants powerful regulatory backing to ensure that the constantly evolving best practice standards are met.</li> </ul>
<b>Issue Six: Concerns about confidentiality and professional accountability</b>	<ul style="list-style-type: none"> <li>Provide guidance for registrants to protect the public by encouraging best practice.</li> </ul>
<b>Issue Seven: Fear about being taken away from direct patient care and of duplication</b>	<ul style="list-style-type: none"> <li>Give individual registrants powerful regulatory backing to create the independent, professional power base to be listened to in relation to this.</li> </ul>
<b>Issue Eight: Fear about computerised monitoring/performance management</b>	<ul style="list-style-type: none"> <li>Note and action any code violations that ensue from registrants caught in this potential real time dilemma.</li> </ul>
<b>Issue Nine: Lack of an effective voice on behalf of nursing</b>	<ul style="list-style-type: none"> <li>Lobby for independent professional nursing advice as a means of encouraging nursing accountability.</li> </ul>

## Professional organisations (e.g. RCN): actions

<b>Issue One: Strategic gap</b>	<ul style="list-style-type: none"> <li>Understand that, in any of the UK countries, lobbying government alone is not sufficient. There is a need to articulate the 21st century needs of nurses and to proactively address them in new ways.</li> </ul>
<b>Issue Two: Lack of integration across health/social care</b>	<ul style="list-style-type: none"> <li>Independently and proactively negotiate with other professional bodies best practice for cross-boundary integration before the implementation of systems, and support professional research and evaluation of new methods.</li> </ul>
<b>Issue Three: Lack of nurse input into design – problems with standardisation versus professional judgement</b>	<ul style="list-style-type: none"> <li>Proactively negotiate professional involvement in the design and operationalising of systems and argue for independent professional research and evaluation of new methods.</li> </ul>
<b>Issue Four: Lack of access to hardware or 24/7 support</b>	<ul style="list-style-type: none"> <li>Proactively negotiate agreements in respect of the minimum requirements enabling nurses to use these as a formally agreed lever in negotiation with employers.</li> <li>Provide guidance and support to members.</li> </ul>
<b>Issue Five: Lack of training and education</b>	<ul style="list-style-type: none"> <li>Provide comprehensive, independent, professional guidance and educational programmes as a service to members.</li> </ul>
<b>Issue Six: Concerns about confidentiality and professional accountability</b>	<ul style="list-style-type: none"> <li>Provide timely guidance and support to members.</li> </ul>
<b>Issue Seven: Fear about being taken away from direct patient care and of duplication</b>	<ul style="list-style-type: none"> <li>Independently and proactively negotiate agreements in respect of the minimum requirements (possibly with NMC and RCM) enabling nurses to use these as a formally agreed lever in negotiation with employers.</li> </ul>
<b>Issue Eight: Fear about computerised monitoring/performance management</b>	<ul style="list-style-type: none"> <li>Independently and proactively negotiate agreements in respect of best practice in performance management and monitoring methodology.</li> </ul>
<b>Issue Nine: Lack of an effective voice on behalf of nursing</b>	<ul style="list-style-type: none"> <li>RCN should substantiate its claim to be 'the voice of nursing' by accepting a leadership role, facilitating the integrated actions exposed by this work, negotiating on behalf of nurses and providing advice and support to its members.</li> </ul>

## Educational providers: actions

<b>Issue One: Strategic gap</b>	<ul style="list-style-type: none"> <li>Universities need to recognise the shortfalls of the traditional educational programmes for e-health and ICT in the NHS by articulating the different needs across the UK to inform and support strategic action.</li> </ul>
<b>Issue Two: Lack of integration across health/social care</b>	<ul style="list-style-type: none"> <li>Universities need to forge new win-win links with all stakeholders, including suppliers, for start-up and continuous development of learning around ICT systems.</li> </ul>
<b>Issue Three: Lack of nurse input into design – problems with standardisation versus professional judgement</b>	<ul style="list-style-type: none"> <li>Universities should play a major part in the development of e-health products through independent learning and research. The win-win opportunities with political, professional, client and commercial entities are obvious.</li> </ul>
<b>Issue Four: Lack of access to hardware or 24/7 support</b>	<ul style="list-style-type: none"> <li>Include access to NHS hardware and appropriate support for that equipment in any education/research agreements with stakeholders.</li> </ul>
<b>Issue Five: Lack of training and education</b>	<ul style="list-style-type: none"> <li>Universities need to recognise the shortfalls of the traditional educational voice/purchasing method for e-health and ICT in the 21st century by articulating the different needs of each UK region to inform and support strategic action.</li> </ul>
<b>Issue Six: Concerns about confidentiality and professional accountability</b>	<ul style="list-style-type: none"> <li>Include these issues in all educational programmes and research/evaluate best practice.</li> </ul>
<b>Issue Seven: Fear about being taken away from direct patient care and of duplication</b>	<ul style="list-style-type: none"> <li>Actively seek a new funding/contractual environment, where education has a huge independent role to play in the continuous evolution of a body of nursing knowledge to underpin successful e-health options.</li> </ul>
<b>Issue Eight: Fear about computerised monitoring/performance management</b>	<ul style="list-style-type: none"> <li>Ensure that research data are properly anonymised and not made available to service managers.</li> <li>Facilitate critical professional investigation of practice-based methods.</li> </ul>
<b>Issue Nine: Lack of an effective voice on behalf of nursing</b>	<ul style="list-style-type: none"> <li>E-health similarly exposes the need for 21st century innovative models of nursing education collaboration with stakeholders.</li> </ul>

## 6.0 Next Steps

- Publish and disseminate these findings both within and beyond the RCN as a means of increasing awareness of the need for professional action on behalf of nursing;
- Establish methods to continue to monitor the fast moving e-health situation as it is experienced by nurses across the UK;
- Press all relevant stakeholders to ensure, as a matter of urgency, the essential action planning;
- There is a clear need for further research and understanding of the emerging issues for nurses in the field of e-health.

## 7.0 Post Script

This project identifies and illustrates current issues associated with the speed, scope and complexity of the fast moving e-health agenda in the UK. The speed at which the environment is evolving inevitably means that pieces of work such as this one barely keep pace with developments.

A major question for nursing must be:

Who carries the responsibility for ensuring that the professional interests of nurses and nursing are identified, developed and protected in a future healthcare environment underpinned by ICT?

This project therefore challenges the RCN and other stakeholders to acknowledge these issues – recognising that, in 2007, this is only the tip of the iceberg. National ICT programmes have yet to become full reality for most frontline nurses. Many nurses still have no knowledge of or interest in e-health and ICT. Very few fully understand the implications for nursing practice. The challenges can only expand as national programmes are rolled out, and eventually nurses everywhere will be affected.

The report argues that there is a need for all stakeholders to review the recommendations and to acknowledge the need for innovative collaborative action. No single entity acting alone can possibly provide the level of enablement that nursing as a profession requires. It is clear that strong independent nursing leadership is needed but there is currently a leadership vacuum.

This role could and should be undertaken by the RCN. In funding this project it has taken a first step.

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## 9.0 Appendices

### Appendix 1: Sample Key Informant Responses

The following sections provide further in-depth discussion from the information gathered.

<p><b>Future direction of health care</b></p>	<p>The NHS Plan, A Plan for Investment, A Plan for Reform (2000) and the supporting subsequent governmental papers have stated how health care is to change towards providing preventative care programmes, moving health care from secondary care into primary care. This together with the emerging Foundation Trust status is causing great changes within the health arena. New providers of care are emerging from voluntary and charitable organisations to supermarkets and stores e.g. Asda. Some implications from the changes are:</p> <ul style="list-style-type: none"> <li>• Difficulty with communicating across teams and across different organisations;</li> <li>• Difficulty with knowledge management;</li> <li>• Patient more in control;</li> <li>• Early detection of disease;</li> <li>• The health agenda is making nurses become more involved in the environment – ‘think of illness and treatment, Life checks etc’;</li> <li>• If activity drops quickly, nurses need to change what they are delivering. Nurses are not ‘geared up’ as health workers.</li> </ul> <p>‘E-health challenges people’s autonomy’ and can introduce a different environment where the professional’s conversation is ‘not controlling, or a one way dialogue’. It changes the relationship with patients.</p> <p>E-health means we have got to think Globally, as well as Nationally. ‘Good colleges need to be aware of this.’</p> <p>E-health is seen as a multifaceted electronic process which will support decisions making, provide information, support research, exchange of knowledge and education. There are implications with use of ICT as it works in ‘real time’. Nurse’s ‘frame of mind’ needs to be changed and supported. A guarantee of the safety of using Information Technology is necessary. Industries are using ICT to improve their services and are very positive.</p>
<p><b>Technology</b></p>	<p>The technology used in e-health varies greatly from the ordinary telephone, televisions, video-conferencing, telemedicine, picture archiving computer systems, electronic records etc.</p> <p>Technology was seen that it could be a barrier especially if attending a patient in bed and the nurse was required to complete the assessment on the desk.</p> <p>Innovative ways of using technology to ensure interaction with patients should be encouraged.</p> <p>Different skills for telephone conference are required and to record information. We need to be mindful of ‘what we say and what they say to us’.</p>

	<p>Long term implications of the introduction of technology as a tool, is that there will be a shift to increased numbers of people being cared for at home.</p> <p>Reduction in Doctors hours has given rise to more Nurse practitioner roles. Their skills need to be extended. Technology was seen to be a useful tool for this growing group of professionals.</p> <p>ICT has promoted support guidelines, protocols and reference text on the 'way to do things'. Print tends to be seen as gospel and dictates what must be done.</p> <p>Regarding the use of Technology some of the following sentiments and comments were made:</p> <ul style="list-style-type: none"> <li>• Technology will enable remote monitoring –intensive care in the community, could occur.</li> <li>• Long term conditions; assistive technology could reduce admissions. Tracing some 'patterns' could be useful.</li> <li>• Technology will support more and more care in the community.</li> <li>• Issue of Nurses being comfortable with new technology – non technophobia workforce.</li> <li>• Email-driven, need to retain human touch, concern re home workers, losing touch with colleagues.</li> <li>• ASDA now use 'management huddles as meeting'. There is a need to have face to face contact.</li> <li>• Telecare – TV or videophone, will enable you to visually see patients to enable you to visually assess and read body language.</li> <li>• What is the ethical relationship between 2 professional people from 'either end' using remote access – each perspective is different.</li> </ul>
<p><b>Skills</b></p>	<p>We are moving into an 'Unknown area, NHS Direct e.g. has caused deskilling of some traditional skills and instead requires decision making skills and people skills to 'maintain contact and rapport'.</p> <p>Nurses are used to planning and delivering care, and may be task orientated. They are not used to using large amounts of information to direct care.</p> <p>Nurses are not used to 'collating information for analysis' and degree programmes do not necessarily provide these for the practitioner.</p> <ul style="list-style-type: none"> <li>• Health informatics has been removed from the curriculum. Teachers have limited knowledge and are unable to 'pass it on'.</li> <li>• We need to train people to use their analytical skills, to help them to assimilate information and analyse it in a number of different ways.</li> <li>• Nurses are not taught the skills to give clinical advice over telephone. These skills are learned and acquired by the individual.</li> <li>• Communicating by telephone, using email – led by professional knowledge – versus algorithm.</li> <li>• Skills required for the use of E-health are the same as now. However, listening skills are not supported by visual guise of body language with some technology e.g. telephone conference.</li> <li>• Non 'face to face' will affect nurses' role which is diminishing. Becoming more</li> </ul>

	<p>threatened by use of ICT. Communication is different.</p> <ul style="list-style-type: none"> <li>• Must use the computer and its advice not the nurse's instinct and what experience tells them. There could be a conflict.</li> <li>• Face to face dialogue via 'television' consultations will require different modes of how we will deliver the message.</li> <li>• Decision support needs skills – telephone triage – need to use algorithm. Use of telephone will be the plateau.</li> <li>• Telemedicine will be significant, teleconsultation, introducing facets of clinical relationships. Consultation and video links – different relationships. Who will take responsibility for what?</li> </ul> <p>We need new skills e.g. to access information in a home, to access equipment, need support system. More specialist roles – hospital will be more technical and the patient and nurse will be more technically focused. Healthcare assistants will be trained to undertake many nursing jobs. Senior Nurses may do the initial assessments and then delegate to juniors.</p> <p>Nurses will be a key facilitator as they are more comfortable with handling information and knowledge. However, another level of skill is needed to help present information in laymen's terms and in a manner appropriate for people to understand.</p> <p>'We will need to compare and contrast properly. However a nurse 2 to 3 years post qualified will need skills in use of handling information, above the patient care record level. This is happening to doctors. Resources will need to be justified. Skills to present analysis benefit of care they are delivering. Interpretation and presentation will be required. This could be a post registration course to ensure that the depth and breadth is covered.'</p> <p>Roles are changing they become more generic. In the future there could be a deficit in Doctors which will affect where care is provided. Call centres/virtual role may 'fill the holes'. There may be a need for specialist nurses.</p> <p>Skills will be required to manage this virtual environment. Nurses may not have entered nursing to manage call centres. Some services lend themselves to this but it will depend on support structures.</p> <ul style="list-style-type: none"> <li>• We are in danger of losing nursing skills – the art of nursing – tacit knowledge. There was a concern regarding how nurses would cope working 100% all the time. The new ways of working will support 24 hours nursing in home of more dependent patients, much more possible.</li> </ul> <p>Education is required around understanding use of data e.g. in relationship to payment activity. Need to understand the wider purpose. Nursing has never been costed. Technology will be used for analysis and long term, support of patient care. Education of nurses will be affected by e-health; e-learning will become a primary tool.</p> <p>Competency skills related to 'information handling' should be included in job description as part of nursing.</p>
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<p><b>Patient records</b></p>	<p>Everything you do will be recorded immediately – you will not need to keep information in your head. This will require a new mind set for nurses. Real time recording and receiving of information from different disciplines will provide a change to our practice. Team work will be more transgressed and overt. Information from different ‘Specialities’ will be available to everyone so all are up-to-date and aware.</p> <ul style="list-style-type: none"> <li>• We may need to work on some of the processes to support this truly multidisciplinary information environment.</li> </ul> <p>Nursing relies on information – ‘paper system has gaps’ this (EPR) will be more efficient, and auditable. It won’t change practise. However another interviewee, felt that the audit process may give a ‘Big Brother’ feel, and that Nurses should be supported with the expectation of audit and system management of information as part of the healthcare process.</p> <ul style="list-style-type: none"> <li>• ‘This is not just going to affect nursing; it will affect the whole service, NHS and Independent sectors. It will improve communication.’</li> </ul> <p>‘We don’t know what we don’t know’ regarding how this will affect our pattern of work. We have our own way of doing things locally. We are not actually prepared to think how we do things and need to change on a broader field.</p> <p>This is a big change, younger people will be brought up with computers therefore it will not be so difficult for them. Those used to paper, will need to learn be more precise with documentation. There is concern that there will be big gaps in awareness of what is coming.</p> <ul style="list-style-type: none"> <li>• ‘Paper record – we will collate information into that record – we will have one unified record, information ‘mixed in’. We are not looking at how to construct notes differently. Terminology etc. People need to learn new ways of expressing themselves.’</li> <li>• Not preparing workforce very well in coping with plethora of information – how can we make it easier for them to interpret.</li> </ul> <p>There is a danger with accuracy of communication of information with someone in the same environment – currently this is often backed up with verbal communication. Single record will be viewed and available to many people who may not be available to elaborate on comments. Documentation of information will need to be precise, concise and clear.</p>
<p><b>Handling information</b></p>	<p>With handling information, one has to be able to identify what is ‘good’ information and ‘bad’. Nurses were thought to be in a strategic position, and could be a powerful component in providing support and helping with this process.</p> <p>Understanding what is a reliable web site, and why it is reliable, being able to make a judgement between what could be of use and what should be ignored was seen as something nurses would be able to do. This is something that patients may well turn to the nurse or healthcare worker visiting them in their home for advice on.</p> <ul style="list-style-type: none"> <li>• Nursing Professions could take a lead on this and assist with ‘rubber stamping’ and the quality control from their perspective, which would give nurses support.</li> </ul>

	<p>Many people commented on the 'control of information'. There is now a large influx of information with people not always aware of where it has come from. Patient's are now often better informed than nurses, both with correct information or sometimes dubious. Nurses were seen as needing support in handling this situation. The 'ICT' literate patient makes consultation different.</p> <p>Nurses will be confronted by people with preconceived ideas and information. Suitable coping skills will be needed and centrally national programmes need to do more with accreditation of information and 'search solutions'. The issue is wider than search engines. Often one will have to look on the second page following a search to access 'good' NHS information. Use of health spaces, may be of use with automatic links. However, this could be seen as 'Big Brother' therefore, help to make this more easily understood is essential.</p> <p>Keeping information, protocols etc. up to date was commented upon. With so much research and availability of information, how was this growing demand to be supported? NICE is managing to provide some support.</p> <ul style="list-style-type: none"> <li>• Nurses could be in a vulnerable position if unable to keep up to date and able to access current reliable research information. This could fall into today's growing litigious society.</li> </ul> <p>Ideas put forward to resolve these ideas was by using structure with commonly used 'items' first. Views need to be tailored to the information needed. Professional judgement was suggested as essential for this.</p> <p>Nurses have been used to entering information and extracting information. The next step proposed by some was that they needed to manage patients by using this data. Quality of data entered is also highlighted as an issue.</p>
<p><b>Confidentiality and legal</b></p>	<p>Legal issues will become tougher; will be more auditable and more efficiently managed. Nurses are not always good at choosing information but better at sharing information. There are laws they need to be aware of.</p> <p>Confidentiality and sharing of data was seen by some of the interviewees as not a problem others felt that the professional debate 'had not yet been aired'. The approach to this was thought by some to not be taking a pragmatic approach, or having a good enough debate.</p> <p>Ethical and legal implications could come into force where someone has helped out on a procedure that previously may not have been recorded. Responsibility of recording information and accountability becomes highlighted. No 'grey areas'.</p> <p>There were a few comments about legal issues and ethical issues being debated at higher levels.</p> <ul style="list-style-type: none"> <li>• Concerns that professional bodies are not doing much to support these subjects.</li> </ul> <p>Data Protection and confidentiality of the whole of the patient record was seen as becoming significantly better, especially with the facility to audit, who accessed what.</p> <ul style="list-style-type: none"> <li>• 'Sharing of data and access to it both professionally and locally is likely to be clumsy at first but will become quicker and easier. There are learning curves</li> </ul>

	<p>to be climbed.'</p> <ul style="list-style-type: none"> <li>• Legal issues could occur around the 'commissioning processes. The liability – will sit with who holds the contract.</li> </ul> <p>Information collated in this country may be used 'Off shore' in the future if Foreign Companies are used to provide e.g. 'telephone' healthcare services. Likewise information collated from other countries may be used in the UK. The legalities surrounding this may need to be explored, and Data Protection revised.</p> <p>Technology will support good comprehensive records that are more confidential and more accessible. It is a 'bit of red herring, loss of control is the main concern'.</p> <ul style="list-style-type: none"> <li>• Access supports the legitimate relationship.</li> <li>• Privacy in consent is controlled</li> <li>• They (nurses/doctors) perceive duality, patients tell them things that are confidential, controlled by them', this information 'never went out of the surgery'.</li> <li>• GPs comment why let people take 'our' data.</li> <li>• Technology can be used for taking data for reasons other than care.</li> <li>• Secondary users performance monitoring</li> <li>• Monitor control/care of patients – what we want to do as opposed they want to do.</li> </ul> <p>There is a belief that local protocols may be 'taken to task' and a risk of having sets of rules and regulations as more legal cases occur, complaints are made and to support performance.</p> <p>There was a comment around 'Gate keeping of care' and related ethical issues. How far do you separate the need of people to talk about concerns, solutions of government managed lifestyles?</p> <p>Patient issues are not addressed, these systems separated out, ethical point of view against the interest of patients.</p>
<p><b>Sharing of information</b></p>	<p>Sharing of patient's confidential information between professions using e.g. telehealth is fine. The fear is around 'why you should have a central database'.</p> <p>Why do we want a shared record, what is it wanted for; some data maybe. Look at competencies look at QOF and NSF proxies for compliance. Ethically we need to question what Professionals are collecting information to be used for. Is it for care or for healthcare programmes?</p> <p>All professions need to be more honest re desire to share information and to work together to break down barriers between different professions. There is 'parochial protection of information'.</p> <ul style="list-style-type: none"> <li>• Sharing of data? If we do not understand what is being saved can we be responsible?</li> <li>• Social care information – people do not always want others to know this; however you should be able to share information to look after people.</li> <li>• Privacy of information – 'exchange is out in the open', we know what is being recorded and who is viewing it.</li> </ul>

	<p>Sharing of Patients could put the patient in a difficult position if they are not made aware that this is happening. Nurses will have to be educated on processes to restrict access to patient information and the rules or regulations around this.</p> <p>Nurses will have to be briefed on understanding what is held locally on an electronic patient record. Need a campaign to help staff understand re sharing of data and the issues that it may cause. Nurses must wake up to the fact that there is an audit of who accesses data and views the patient record.</p> <p>Nurses will need to gain patient consent to 'sharing of their information'. Nurses will need support with this process. They will need an understanding of what consent entails. They need to be educated and informed on this, otherwise they could fall prey to breaches of confidentiality if they do not adhere to principles.</p> <p>Structure built in the system, understanding of priorities – role-based access can reflect priorities. If workflow does not reflect clinical practice this will be an issue.</p>
<p><b>Informed patient</b></p>	<p>Care is becoming more and more patient-centred. The patient will have access to their own healthcare record, for them to record their own data.</p> <p>Nurses were seen in this environment to become more of a care coordinator and facilitator of knowledge. Many of the interviewees thought Nurses would take up the role as patient advocate.</p> <p>We have an 'Illness service' and are moving towards 'preventative care' together with the empowerment of patients. Nurses need to be clear how this will work with patients. There is a danger that ICT will make us do things differently.</p> <p>By being informed Patients will be in a better position; it has to be good. They will be able to enter data e.g. diabetic blood tests and enter them into their own record. They will become more engaged with care.</p> <ul style="list-style-type: none"> <li>• Vulnerable patients, we need to focus on them. They will need the support and facilitation skills of the health professional.</li> </ul> <p>Patient access to information will be for the good. However, words like compliance may need to change to treatment advice.</p> <p>Will patients find ICT acceptable and want access to their records.</p> <p>Innovation in nursing, care co-ordination may be undertaken with technology by other people or the patient. The nurse will become the facilitator for patient.</p> <p>Patient's accessing their records and dealing with the informed patient will become increasingly challenging, scary and, especially if you don't know something and they are expecting you to be an expert. Feelings of inadequacy and being not good enough, together with concern and feeling threatened may result for the professional.</p>
<p><b>Access</b></p>	<p>Access of data was commented on especially around role-based access (RBAC) for the professional. Nurses will get access to the information they need and in relation to their own professional accountability. RBAC is frustrating regarding restriction on what someone will see, roles are confusing, currently several different roles may require access to parts of the system. It will probably be beneficial, if roles are accurately allocated, however it could be quite challenging.</p>

	<ul style="list-style-type: none"> <li>• Role-based access is going to be complex and could negate benefits of system of sharing information.</li> <li>• Do we need different levels of access for clinical and for non clinical, if doing the same.</li> <li>• How will professionals in the future, enable us to become more homogenous between professions – accelerate boundaries between professionals by enabling, or negate and restrict and increase barriers.</li> <li>• Patient access to information, smart card list of patients will become easier. Should get easier. Physical access is the problem. Some hospitals have old PC's – need to invest in the infrastructure.</li> <li>• Nursing and medical councils need to work with system suppliers to review guidelines on medicine administration. To ensure standards are incorporated into guidance ( guidelines and standards and technology)</li> </ul>
<p><b>Structured information</b></p>	<p>If information is too structured it can become obstructive to clinicians. People are mobile; Clinicians have preferable ways of doing things. Structure may restrict this. Currently looking at how free text could be used.</p> <ul style="list-style-type: none"> <li>• Data mining techniques have overtaken the need for structured information. Karl Olrith, in Sweden, has undertaken some studies on browser technology. A patient folder is all that is required, no need for cleverer system.</li> </ul> <p>Structured records will be a good thing, however there is a concern regarding how prepared staff are for these. Documentation skill level to use this style of record well needs to be raised. This is seen as being the mundane part of the process not point of care.</p> <p>This style of record could prove problematic for identifying issues. This is a tool not a crutch if used well.</p> <p>'Need to make sure we have standardised language, to audit patient care and aspects of care. We need a structured format'. If we do this now we will be building on what we have currently. It will be hard to change to structured data input, people may find it restricting. The move may prove difficult for some. However, other interviewees felt that moving from manual data would not be the massive task as we think it. Flexibility of system and understanding how to use the system would support this.</p> <p>Structured data was identified by some, as being supportive of the mathematical logical philosophy, not an 'artistic' approach. The structured approach was seen as a set of 'activities' that person requires – it is trying to make it a 'mathematical process' and formalised structure, we need to 'prove we are a profession'.</p>

**Additional comments and examples:**

Frequent key informant comments	Associated examples
'We don't know what we don't know'	<ul style="list-style-type: none"> <li>• New providers e.g. supermarkets are entering the market, which may have an impact on nursing. Technologies can be supportive of these new providers. Advantages could be gained.</li> <li>• However, there is a need for Leadership from the Nursing Professions to ensure Nurses are protected and supported in this changing world</li> </ul>
'Need to understand how to involve technology'	<ul style="list-style-type: none"> <li>• To benefit and support our ways of working. Clinical professions are seen as often being largely unaware of the need to think or consider how work in the Tele-health world is moving.</li> <li>• Likewise the implementation of an electronic health record, whilst essential, in many ways was clouding the skyline preventing many topics from being explored in a true context.</li> <li>• There was a general believe that many more benefits would become apparent as more technology was used.</li> </ul>
'An art/philosophical' aspect to care as well as a scientific approach.'	<ul style="list-style-type: none"> <li>• There were concerns that technology could be seen as belonging very much to the logical, scientific, mathematical approach and we were moving away from the artistic qualities of care, which could have a very bad impact on nursing.</li> <li>• Improved efficiency with use of technology will require us to think differently and in many ways look laterally especially with new ways on delivering services and responding to care. We must remember that 'people are people' and in many ways will still be the same, especially if ill.</li> <li>• Will the future nurse be giving nurse care, as we currently know it or will they become a Specialist or Manager of patient care? A thought that came forward was that if responsibilities were abdicated it could become the demise of nursing.</li> </ul>
Senior nurses appear to have limited ideas of the changes taking place for nurses and staff.	<ul style="list-style-type: none"> <li>• There were thoughts that nurses need to position themselves, acquire knowledge and understanding to be able to be proactive, define and prescribe their future path.</li> </ul>
The role of nursing was seen by many as becoming that of the patient's advocate and to be facilitative	<ul style="list-style-type: none"> <li>• A new culture of 'thinking on one's feet', to deal with the demands of a very aware patient, is developing. Patient's have higher expectations that medicine can cure everything.</li> <li>• Nurses will need to be encouraged to think and question whether they should do something or not. This is professionalism.</li> </ul>

<p>There is a need to think positively on how to use information to help nurses in practice.</p>	<ul style="list-style-type: none"><li>• The technological world supports the use of formulas and guidelines, which has a tendency to make people believe that they are right if following the guideline. This does not encourage question or thought.</li><li>• What Nurses do was believed to be 'unique' and should not be lost. Professions must, therefore, show leadership in this environment, the opportunities must be taken before it is seen to be too late to have any great influence.</li><li>• Within the professions there seems to be a lack of recognition of informatics as a legitimate speciality for nurses to do.</li><li>• The Profession as a whole was thought to not understand fully the activity going on within e-health although</li></ul>
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## Appendix 2: Sample Focus Group Responses

The following tables attempt to illustrate the themes in more depth:

### Theme 1

The NHS, nursing and ICT need joined-up, client-focused pathways and processes across areas of care (patient experience) with effectively organised referral options, as none of these currently exist.

Sub elements within theme	Sample quotes from focus group participants
Lack of (and need for) shared information in effectively designed care pathways across referral agencies	<p>'No-one is looking at the whole service altogether...we could save money if these services were coordinated – doing it like a care pathway'</p> <p>'There should have been more investment into the process prior to the introduction of IT.'</p> <p>'...one of our failures has been to chunk our little bit and make that perfect but forget all the bits that arrived before and all the bits that happen afterwards so I certainly think there is...potential across organisational boundaries.'</p> <p>'I agree completely about being in our own little compartments – we need to be joined up.'</p> <p>'Any system is only as good as the sum of its parts; if those parts are not linked its not going to work.'</p>
Shared information being a) relevant b) contextualised for clients c) in confidence d) a professionally justifiable need	<p>'The nature of mental health...people are chaotic...One depressed person, one chaotic person – doesn't follow the same pathway.'</p> <p>'...it is about how you build in systems and processes, not necessarily software but systems and processes which actually take into account the different needs of Mr Smith, Mr Jones and Mr whoever...And those are the hurdles that we haven't really addressed and what is being imposed is a one size fits all result potentially...'</p> <p>'...Things aren't always done effectively so things are introduced that people haven't signed up to and there's power struggles.'</p> <p>'...It's all about health literacy and how patients can actually access that information. Not everybody has the same ability to access or interpret the information.'</p>
Duplication in input which results from different systems/methods across agencies and/or a mix of paper and computer	<p>'I also work with social services and the two systems don't to talk to each other and that is a real difficulty, so we're continuing to do paperwork all the time and for sap forms which is single assessment process we are not doing one single assessment process we are doing several because the computers don't talk to each other. So it caused a lot of difficulties and I think there is a big area for error.'</p> <p>'I might see a client or a child say one morning and they may...need a speech and language referral (and a) a hearing check and they will need</p>

	<p>referral to a community paediatrician. So I have to carry around this bulge of referrals just in case or do the referral when I get back to the office. I don't need to be a qualified nurse to fill out forms and all forms are different they need filling in a different way.'</p> <p>'The problem with it is that I can't get onto the computer and at times I have paper forms and I have to do a lot of duplication (and) I then have to enter it onto the computer system.'</p>
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## Theme 2

Lack of nurse input into the design of ICT systems; ICT systems do not support the way nurses work.

Sub elements within theme	Sample quotes from focus group participants
<p>Acute areas: lack of involvement/appropriateness of actual input/time needed to input data</p>	<p>'You can have people very confident at writing a system, the problem is they need access to people who are competent to tell them what system is required.'</p> <p>'People were called (for LSP work) at very short notice and it became quite clear that the people (who went) weren't up to speed with developments... all this time is spent on explaining how you should look after a patient to a group of people who are meant to be experts...Huge problems...it wasted hours and hours...a lot of people got fed up to the point where you think I can't do this anymore.'</p> <p>'My main worry is that the whole thing which (is) designed around us is not at all useful and is going to be increasing the time that we spend inputting at the computer rather than working with a client.'</p>
<p>Community areas: mix of paper methods, duplication, lack of anyone facilitating or valuing nurse needs/advice re changing processes. Not helped by PCT changes</p>	<p>'Why do you have to record your mileage (on paper) when they could give you a GPS which would also help you get from A to B... it would save hours and hours of time.'</p> <p>'A lot of (nurses) actually wanted to talk to the PCT (about ICT issues) but there's nobody there specific for them.'</p> <p>'...There were concerns about the amount of time it was taking to do things and there was a concern about whether that would slow up the hospital so much we could not actually treat patients. So there is a bit about how do you get the system to really work with you in order to produce an efficient and safe service for patients.'</p> <p>'...although (the ICT) had advantages, helping them to put the notes directly/reading directly into...the patient notes, they have problems with compatibility with the current system as you've mentioned before.'</p>
<p>Mental health: imposition of system which requires excessive time for data input</p>	<p>'These electronic systems are written by statisticians and computer experts and they're not written by patients or people.'</p> <p>'I think we have got quite a few examples where maybe record keeping becomes too onerous and you are actually taking the nurse away from</p>

	<p>the patient by expecting her to...Sit at a computer and complete records and I think that takes us into a sort of workforce skill mix issue.'</p> <p>'I increasingly feel that my work is computer-driven really that it's led by procedure not by client need and I'm spending more and more time on a computer and less time with my clients.'</p>
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### Theme 3

Lack of an effective independent voice on behalf of nursing.

Sub elements within theme	Sample quotes from focus group participants
<p>Recognition of the current pressures within the NHS work environment. Survival rather than motivation</p>	<p>'...At the moment I can see it might be a bit of a struggle to feel empowered in the NHS...a lot of cost cutting and saving so nurses might not feel that motivated to be empowered. They might just feel like coming in doing their work and then going home again. Also there's a lot of fear for their jobs as well.'</p> <p>'We should be more proactive rather than sitting saying no this is wrong'</p> <p>'That's because you're not given the choice most of the time?' 'It probably is but we need to be more focused don't we?'</p> <p>'Perhaps we haven't had the confidence; we've allowed something to be applied to our profession with minimal involvement.'</p>
<p>Acute care: anonymity and lack of empowerment</p>	<p>'I think that when you're working for an acute Trust or a big organisation you're more anonymous.'</p> <p>'Essentially I have had no influence in critical care (into) something that's being implemented.'</p>
<p>The realisation that this is political – and nurses are not political</p>	<p>'I suppose it's making nurses more politically aware but a lot of nurses aren't.'</p> <p>'(The RCN and RCM) should be there speaking for their paid members and they should be knocking on the doors of the ministers and so forth. Every opportunity they get, every committee, the media you name it, to raise the profile and to tackle the contentious issues and have regular meetings with the Secretary of State for Health and so forth and it has to be very high level and it has to be a never ending campaign on this crusade.'</p>
<p>The need for active political and professional representation by professional organisations</p>	<p>'I also think there is an organisational culture issue that people are very anxious about expressing views that their job and their mortgage might then be on the line because they have expressed those views and I know this is sort of working within the RCN etc, I think the RCN is actually part of that culture and is less willing to challenge than perhaps it should be, maybe it will change...but maybe not.'</p>

Theme 4

Does the data/record reflect 'nursing' and the client? Is it confidential and accurate?

Sub elements within theme	Sample quotes from focus group participants
<p>Recognition of the needs of different clients both as groups and individuals. How important this is to nursing/midwifery and how it challenges standardisation and exposes equity of access issues</p> <p>How the needs and realities of the above have not always been addressed in system roll outs to date – alongside full recognition of the issues around confidentiality and security</p> <p>The speed of ICT access, change and development and the tensions this causes for nurses trying to maintain skills. Especially in the current NHS environment and culture</p>	<p>'The client is why we're here. We're going to be clients and I treat clients the way I'd like to be treated and the way I want my family to be treated...certainly a lot of our clients haven't got the access (or) if they're unwell, they haven't got the capability to use a computer and look up that information...'</p> <p>'My concern again would be about communication with the patient during the consultations and I do think that computers can sometimes get in the way.'</p> <p>'I think the challenge is as things become more electronic in the workplace, either re how we communicate with staff or systems that people have to use, or data they need to enter or you know, whether it is a record of blood pressure or whatever then we have just got to make sure that it does not take over the whole world and we forget to care for patients in the middle of all that.'</p> <p>'(E-health) offers a lot but (there is) also the fact that everybody will have a different view about it in terms of patients being able to access that information.'</p> <p>'What is useful is that you have got a system there where the outcome for your client is recorded. That's the most important thing.'</p> <p>'...What we do at the face is perhaps not being met by the applications that are being rolled out at the moment.'</p> <p>'We have to resolve the issues around confidentiality and security.'</p> <p>'I think the important bit is this need to know basis. I've got a code of professional conduct, that tells me the things that I have to do and one of those is protect client confidential information. And that I've got a duty of care.'</p> <p>'Can I make a point about this? I think we've got to look at it from the patients' point of view. I really do.'</p> <p>'Technology is always changing – what's in now, in 6 months time is completely obsolete....if health professionals and patients are used to doing something, even though it will benefit them eventually in the future, having something new that you are constantly changing (is difficult). If the organisational culture is not one that embraces change you will have a problem.'</p>

Theme 5

ICT-based decision support worries – fear of ‘computer-driven care’ and the loss of professional judgement.

Sub elements within theme	Sample quotes from focus group participants
<p>The decision support element may cause tensions with individual’s professional judgement if it is imposed to be used as designed in every case.</p> <p>That this imposed element might add time and extra difficulty to the consultation</p> <p>The decision support may encourage the use of less experienced/qualified staff – this causes tensions re a) that they do not understand the extra elements that are not on the software b) that nurses will be held accountable for monitoring/double checking this approach in addition to their own work and to the possible detriment of clients</p>	<p>‘...There is the bit about do you take the decision making skills away from the nurse if the machine bleeps at her when she has to do something and she does not actually have to learn why it is bleeping at her. So there is a bit of, does it actually deskill and take the ability, the thought processes and the ability to problem solve out and of course that is a risk I think and I think you would have to do a bit of an analysis really...There is that funny story in Eric Morecombe’s autobiography when he had lots of heart attacks and the nurse saying ‘blimey he’s died’ and he was sitting up in bed reading a paper but she was looking at the monitor.’</p> <p>‘I think in the medium term we will start to use more decision support which a lot of people find threatening to their professional autonomy and it is about how you make those tools available and when they are referred to and how much that is then imposed or how that is then a guide and I think people are worried that their practice will be imposed.’</p> <p>‘Going back to decision making and how technology could hinder that rather than help. I think that (this) is probably an area for research.’</p> <p>‘...there is also the way in which that change is introduced is seen as top down imposed rather than we actually want this tool to be something for us and the classic thing of the integration of a new technology, whatever new technology, makes it harder, it takes longer to do the same task that you used to do without the technology...’</p> <p>‘...a few nurses were not very happy with the fact that nursing assistants were actually helping them to use the system ...The nurses were concerned because they said ‘well, it’s all good and well that there’s somebody helping us but they don’t actually understand the conditions.’ They might not actually understand that, yes you might get this, but you might need to check on something else. So there is a concern that (the nurses will) actually have to be doing twice the work because they actually have to be double checking what the nursing assistant actually found out, to find if there are any other symptoms.’</p>

## Theme 6

Fear of monitoring via data (Big Brother) – do the data reflect true nurse workload?

Sub elements within theme	Sample quotes from focus group participants
<p>The data collected by the nurse will be a) used to monitor him/her b) will only be what the organisation needs for management data/targets c) will not reflect nurse workload</p> <p>Community:</p> <p>Acute:</p> <p>(Recognition of association of what data is collected with funding)</p>	<p>'My system that I'm going to have to use...I'm going to have to put into a computer where I've been, how long I've spent with somebody... What it doesn't ask me is how long I spend doing paperwork or inputting...the bigger part of my week is actually inputting the stuff, doing my letter, all of my admin but the system isn't asking me for that' 'I guess you feel that a bit Big Brotherish...?' 'Yes absolutely.'</p> <p>'They do not want all the other things I do in a day...They're not asking for any of that. Where I am at what time, who I'm seeing – that's all they want to know. It's what they want – not what you need to do your job properly. They're choosing something to meet some target which isn't client-driven.'</p> <p>'(The record) It should be client-driven, what the client needs, what I'm accessing, what I'm giving to the client, how I'm doing it.'</p> <p>'Then it is about 'what is the purpose, what can I get out of this that is actually going to enhance what I do' rather than being data entry clerks for a manager who is doing their annual report or their finance report or whatever that can talk about bed occupancy rates or something like that and the targets and the star rating things (it) is sometimes seen as 'oh well we are only doing this because we have got to tick the boxes and we have got a target-driven culture. If the ICT comes in at the same time as the target-driven culture it is seen as meeting the target rather than enhancing what we actually do for patients and clients.'</p> <p>'The other thing really interesting in critical care was in data which is all about payment by results. That was another piece of software that will be introduced shortly. I suppose that's why you have ICPs that you fill in that's all about including the severity of the patient's illness. If people forgot to fill that in then that would affect our funding...'</p>

## Theme 7

Training and education shortfall; recognition that e-learning is not effective for everyone.

Sub elements within theme	Sample quotes from focus group participants
<p>Tensions around the training that commercial company's offer – and the learning reality of the nurse</p>	<p>'A lot of the time the training is so commercially based that they don't take the users needs into consideration and also time is limited to about a total of 15 minutes to learn a completely new system...I think that what actually happens is that they get trained and they're left to it but often they don't realise the problems that you'll encounter until a few months after using</p>

<p>Current Trust training options – access and support</p>	<p>the system and there's nobody else to say 'well these are the problems that we've had, what do we need to do to fix it'. They often have to figure it out themselves.'</p> <p>'...From my experience...one person has the right training and then passes it down to other users but I'm not sure if that's the most effective way of doing it.'</p> <p>'We had all new monitors put in by a big company and the training was all based specifically to time in with all of that. (Then) You didn't see them. All of a sudden they'd just gone and all of the trouble shooting happened afterwards.'</p> <p>'There is definitely a lack of training within the Nursing field to use computers.'</p> <p>'Well I've had no computer training. I've had to learn in the surgery on my own. I've just signed up for the European Computer Driving Licence, which our Trust is now providing for everybody. I find it impossible to find the time and I keep getting every 3 months a reminder saying, 'You haven't done your first part,' etc. We generally, I'm trying to get everyone within my team to sign up to it, and say, 'look, take half an hour, even if its only half an hour a week,' but I don't think that Trusts actually acknowledge that this training is required.'</p>
<p>Insight into e-learning possibilities – including needs and shortfalls</p>	<p>'...from the education point of view and new educational opportunities that might mean that more people from a nursing perspective continue with their personal professional development. They might be able to do it at home – in the comfort of their homes, they wouldn't need to travel miles away to college from home to do academic work. There are lots of positives.'</p> <p>'I think also the particular individual learning style you have, whether you are happy to learn on your own again and whether it is through, you know, the written word or through an electronic module that slots in and submitting assignments and whatever way suits some people but doesn't suit others and so there is all of those constraints with it I think in the NHS.'</p> <p>'Then there is a bit about the support, so the general learning support that you would give anybody in studying learning through whatever method, is there somebody that that person can go to if they want a bit of mentoring, a bit of tutoring, a bit of tutorial on x or y either in a planned way or in a more ad hoc way. So I think what needs to happen is the access to the computers, either at work or at home but then there is the issue about what supports that, what supportive mechanism opportunities are there around that.'</p>



## Appendix 3: RCN Workshop Findings

### Edinburgh

- Long term strategic view of e-health and nursing in a context of rapid environmental and care;
- Delivery change;
- Sharing of knowledge, experiences and communicating what's going on (client/nurse benefits);
- Lack of understanding of purpose and 'buy in' to e-health. Seen as information management rather improving care delivery – fear;
- Therefore gap between strategic vision and operational reality;
- Fear linked to professional standing? Age/skills/education related?
- Lack of integration of systems and duplication;
- Resources – time – engage champions/enthusiasts, practitioners. Involvement of frontline staff in strategic planning and implementation/learning;
- Standing of nursing within society;
- Lack of access to hardware and appropriate tools (raining);
- Recoding of qualitative data that reflects client needs;
- Policy and guidelines regarding sharing of patient information across boundaries;
- ICT support 24/7;
- E-audit – feedback into developing patient care (audit never seen – no apparent benefit).

### Cardiff

In relation to recommendations evolving from the discussions and sessions themselves, there is clearly a need to investigate and research the wishes, rights and needs of clients in a newly empowered and informed healthcare environment underpinned and enabled by ICT – recognising that this endeavour starts to address and expose core elements of a nursing model.

Within this several key themes emerged as requiring formal recognition and/or special focus:

- That this is and will remain on-going and evolving client-centred model;
- That there is a need for agreement on what is needed to support core assessment in any area but importantly that this should include the clients' wishes;
- That clients should be given the opportunity to determine levels of access to their own records;
- That the client should have the opportunity to decide and record what is it that he/she wants the health service to know about them and that this should be valued;

An investigation of the emergent professional issues experienced by nurses when working in an e-health environment

- Exposure of the tension between central standardisation and the requirements of professional judgement;
- Recognition of the need for minimal levels of central standardisation which of itself must be subject to on-going development as the needs of client-centred health care emerge.

## Appendix 4: Full Project Team

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**ISBN:** 978-1-85899-254-9