Royal College
of Nursing

Speaking Up

Nurses and NHS IT developments

Qualitative analysis results of an online survey by
Nursix.com on behalf of the Royal College of Nursing

October 2004

Executive Summary

The NHS is currently undertaking major information technology developments, particularly the National Programme for Information Technology (NPfIT) in England, with the aim of supporting modernisation within the NHS. The Royal College of Nursing in collaboration with nursix.com, undertook an online survey of nurses to find out the extent of their awareness of the current developments in Information and Communication Technologies (ICT) in the NHS. It also sought nurses' views on the importance and potential benefits of ICT applications in the NHS, and their training and support needs. The questionnaire was piloted, and then run from mid January to mid February 2004. Two thousand and twenty nurses responded to the questionnaire and the quantitative results of the survey have been published on the RCN web site. This report is the analysis of the 110 pages of free text comments made by the respondents. The nurses came from all branches of the profession, represented a span of experience from students to the retired, from all four home countries of the UK, and a few who are currently working outside the UK.

Results

The problems with information systems described by the nurses in this survey are common across the NHS. What these nurses want to see from the current investment in ICT in the NHS, is integrated electronic clinical records which enable them to have access to full and up to date patient information at the point of care. They want to be able to share information with their colleagues in other disciplines and in other organisations, securely and appropriately. The respondents want expert nursing involvement in the design and implementation of the new systems, and they wish to be assured that all nursing staff will have training appropriate for their needs, and that there will be equity in access to information technology. They wish to see standardisation of systems across the NHS, believing that this will make it easier for staff moving from one area of the country to another, and that it will assist in bringing equity in standards of care for patients across the NHS. They believe that good electronic information systems will improve patient care, by helping to reduce errors and duplication, and giving nurses more time for direct patient care. The respondents wished to have equity of access to knowledge based systems, to assist them in the provision of evidence based care.

The respondents had some concerns about the introduction of new ICT systems in the NHS, partly because of experience with existing poorly designed systems that do not support nursing practice. There is concern that some older nurses will find it difficult to embrace new technology in their workplace, and that the history of unsuccessful ICT implementations in the NHS will make staff cynical and apathetic. They had some concerns about confidentiality and security of patient information, especially for sharing information outside the NHS, and they want guidelines within which they can work and share information with confidence. Nurses also want to be clear about accountability for record keeping in the integrated patient record.

The results of this survey show that these nurses have clear ideas about how information technology could help them and their patients, and about what will be necessary to bring these solutions into practice. Concerns and some scepticism were noted about current modernisation efforts across the UK, but overall there is a willingness and enthusiasm to engage and to see the modernisation of the NHS underpinned by advanced and effective IT systems. The survey provides clear direction for working with the nursing professions, for

those responsible for developing and implementing integrated electronic record systems in the NHS.

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1. Introduction

The NHS across the UK is developing new ways of delivering effective and efficient services with Information and Communication Technologies (ICT) being a major element in support of improved public health and health care. In England the National Programme for Information Technology (NPfIT) is herald as the largest IT health project in the world with the aim of supporting modernisation of the NHS, in line with current NHS policy and the recommendations of the Wanless Report (Wanless 2004*).* The NPfIT and other modernisation programmes across the UK will have considerable impact on the working lives of all staff in the NHS and their patients, with nurses being the largest single professional group in the NHS. The Royal College of Nursing wishes to ensure that the (electronic) systems developed in these programmes support the highest quality nursing care, and that nurses have access to all the training and educational materials they need. The success of these programmes depends on full engagement with nursing, the other clinical professions, social care staff and patients and the public.

2. Objectives

The online survey carried out by the Royal College of Nursing and hosted by Nursix.com (an online web portal and market research organisation), aimed to find out the extent of nurses' awareness of the current developments in ICT across the NHS. It also sought nurses' views on the importance and potential benefits of ICT applications in the NHS, and their training and support needs.

3. Method

The survey took the form of an online questionnaire developed in collaboration with Nursix staff, and piloted by the RCN during December 2003. The final questionnaire was hosted on the Nursix.com web site from mid January to mid February 2004. The survey was promoted on the RCN web site, the RCN *Bulletin* and emailed to 15,000 users of the RCN Learning Zone and on-line users of the RCN Library. Members of the RCN Information in Nursing Forum also cascaded information about the questionnaire through their own networks.

The questionnaire included 22 questions to capture demographic variables and to ascertain respondents' awareness of NHS IT developments in general. There were specific questions about the development of integrated electronic health care records and their perceived impact on patient care and nurses' working lives. There were also questions about the value and importance the respondents placed on various IT developments, questions about the clinical consultation process for these developments, and about the training and support required. Results of a quantitative analysis of replies were published in March 2004 (RCN 2004) and are available on the RCN web site (www.rcn.org.uk). This report is a summary of a qualitative analysis which examined the replies to two 'open questions', that were included in the on-line questionnaire to provide respondents with an opportunity to express their own views. The respondents were asked what projects (if any) they would most like to see implemented in the NHS and were invited to give the RCN any other comments on the issues raised.

4. Results

Responses to the survey were received from 2,020 nurses, with 110 pages of free text comments. These comments have been analysed by the author using a grounded theory,

constant comparative approach (Glaser and Strauss 1967), and the results checked for meaning and completeness by a fellow researcher.

4.1   The respondents

The nurses who responded to the survey clearly came from a wide range of nursing backgrounds including intensive care, acute care, community nursing, health visiting, mental health, learning disabilities, general practice, operating theatres, accident and emergency, midwifery, occupational health, palliative care, NHS Direct, teaching and research, and a number were working outside the NHS and few outside the UK. All four UK home countries were represented. The respondents were at all stages of their careers, from students to nurse managers, to the retired, and they claimed a wide range of IT skills from those who have completed Masters courses in informatics, to those who claim to have no expertise at all (however, as this was an online questionnaire, all the respondents must have some degree of computer literacy!).

The respondents therefore appear to be representative of the diverse people, occupations and specialties that make up the nursing profession. In their comments, the special needs of each branch of the professions are clearly shown. However striking similarity was noted in the issues raised, in the problems they were experiencing, in their expectations of NHS Information Technology, and in their needs and concerns. What is also significant is that these nurses have clear ideas about how information technology could help them and their patients, and about what will be necessary to bring these solutions into practice. Concerns and some scepticism were noted, about current modernisation efforts across the UK, but overall there is a willingness to engage and to see the modernisation of the NHS underpinned by advanced and effective IT systems.

4.2   Nurses and information technology in the NHS

The current problems with NHS IT, described by the nurses responding to this survey will be familiar to all NHS staff. In effect, these problems are the rationale for ICT modernisation programmes in the NHS. They may be summarised under the overarching problem of communication. This was summed up by one respondent who said:

'At the moment discharge information is very slow and inadequate. District nurses spend a lot of time on the phone trying to find out where patients are, that could be overcome if there was a system of integrated health care records that could be accessed at GP surgeries. Often patients who are supposed to be visited on the day of discharge from hospital are still in hospital when the nurse gets to their home. ...Communication is the key to saving money in the NHS and I feel any money spent on IT as long as it includes training will be well spent as long as it is integrated so that the computers can talk to each other.'

Communicating clinical information is crucial to any form of shared health care, and this can be a seriously problematic process for nurses and other health and social care staff. Reliance on paper-based systems makes it difficult to exchange information with colleagues within and across organisations, and electronic clinical systems that are not integrated are no help at all. All clinicians want the most up to date patient information at the point of care, but current information systems make this difficult, often to the detriment of patient care. Where

clinical systems do exist, they may not have been designed for the purposes, setting or practitioners who are expected to use them, and may be entirely unsuitable for current practice. Nurses may not have access to the necessary IT equipment or may not have had sufficient IT training. Inadequate access to IT also constrains the ability of nurses to access the most up to date knowledge about practice, and thus hinders their ability to provide evidence based care. A health visitor described her difficulties:

'As a health visitor a lot of my work does not fall neatly into the preordained categories that I can enter on the current system. As a consequence a lot of my work is never recognised. Also the system should be able to produce information in a useful form. For many years we have been victims of providing and inputting information that would be of use in the field of profiling our community only to find that the current system cannot be accessed and reproduce the information that has been entered. ......for too long we have had to work with a 'rubbish' system, with inadequate equipment and no positive results'

The problems with NHS IT described by the respondents' will be well known to nurses, nurse managers and informatics managers alike. Some of these issues will be resolved or are in the process of resolution as the National Programme for Information Technology is beginning to be put in place in England. What was evident from the survey is that nurses rather than being negative about IT in the NHS, are merely frustrated at not having it in place already. The nurses responding to this survey show not only a practical approach to IT, which might be expected from a most practical profession, but also reveal the vision that many have, of how information technology could underpin their clinical practice and their patients' experience of health care. The next section examines how nurses want to see ICT moving forward in the NHS.

4.3   What do the respondents want from NHS informatics services?

In their responses to this survey, despite their varied backgrounds, the nurses raised a number of common issues that they wish to have addressed in NHS IT developments. These issues almost all relate to overcoming the difficulties of communication in the complex health and social care systems in which they practice and which their patients have to navigate at critical points in their lives.

4.3.1   Integrated clinical records

An integrated electronic patient record is the single thing that the respondents most want in their day to day practice. Some nurses had been involved in, experienced or heard about the various electronic records projects that have taken place in the UK over the last few years, and some had experience of integrated systems in other parts of the world, for example those with links to US Military personnel who have a single primary and secondary care record that follows them and their families in postings around the world. Whether they have direct experience or not, the logic in this digital age, of a single record or the means to link multiple records, is obvious to many of the respondents. This respondent for example, has no doubts about the Integrated Care Record (ICR):

'ICR is the future means of record keeping, lets get it right first time around!'

Respondents believe that an integrated record system will be more reliable and accurate than the current proliferation of paper systems and pieces of paper, and that it will also save them time. They describe the problems of paper based systems in which the paper record is never in the right place for the practitioner who wants to use it at the point of care, where handwriting is poor and difficult to read, and where pieces of paper such as pathology results go missing. Nurses empathise with patients who have to repeat the same information for every practitioner involved in their care, and are exasperated at having to write the same piece of information on myriad forms for the same patient.

'I find it frustrating now to have to collect information by hand from patients, and transfer it to several other forms, when I know very well it is already in the system/stored in a computer within the hospital already, but I have no way to access it or check it myself.'

Nurses describe the consequences of not having access to up to date patient information when and where they need it, and the implications for patient safety. There are delays in patient care when results or letters are not transmitted promptly, and delays when other practitioners are not informed about changes in care. There is duplication of tests and investigations when results go missing or one practitioner does not know what another has already done. Nurses also argued that discharge planning is not as effective as it could be. Staff time is wasted in looking for notes and in travelling to see patient records, as for example:

'I work with people with both learning disabilities and mental health problems but the mental health trust records of my patients in their units are not available without trailing 20 miles to the acute inpatients ward. Both Trusts have electronic patient records but they are not compatible.'

As described in the quote above, even where nurses do have access to electronic records, lack of integration of clinical systems still prevents effective communication between practitioners and agencies, and incompatible systems were reported within hospitals as well as across organisations. Another nurse said:

'All systems need to speak to each other. Social Services, primary care, secondary care, NHS Direct, prison health care etc.'

The respondents describe how an integrated electronic record will underpin aspects of care that are important to them and to their patients. Continuity of care is a key concept in health care, and it is argued that patients should experience continuity not through receiving care from one health professional, but across the their whole care journey. Nurses point out how patients move from one care setting to another, and from one area of the country to another, so the integrated record will create 'continuity' for the patient and make for safer transfers of care between organisations and practitioners.

'Integrated health records, with accessibility for health care professionals is very important to allow thorough accurate health records. Particularly with a transient population, i.e. mental health service users who move around the UK. '

'Integrated health care records surely must provide more safety and continuity within shared care. I also feel it will save time not to physically have to enter details at every visit.'

The respondents describe how significant the integrated record will be in changing practice and in overcoming the boundaries between primary and secondary care, which is currently the focus of modernisation in the NHS. These nurses do not need to be told that the e-Health programme in Scotland or the Informing Health Care programme in Wales or the NPfIT in England is an NHS change management programme. Nor do they need to be told about the benefit of the vision set for Northern Ireland in the HPSS strategy. They recognise that and are keen to have these programmes in place.

'The introduction of the health care record is crucial to 'real' change in the NHS - other changes such as the artificial split between acute and primary care trusts costs massive amounts of money and creates barriers to good care unlike integrated IT which breaks them down.'

4.3.2   The ability to share information with colleagues across organisational boundaries

One of the key features of the integrated record for the respondents is the ability it will give them to easily share patient information with colleagues in other organisations. They describe how this will be of benefit to patients who will not have to give the same information to every health and social care professional who cares for them, how it will be safer for patients and how it will reduce duplication, and how it will save time for them by making communications far simpler than they are at present. The difficulties of introducing the Single Assessment Process with each discipline having its own paper records, or electronic record systems that are incompatible, was given as an example of the problems caused by the current multiple record systems. One nurse said that what they would like is:

'A process that would allow seamless flow across all agencies - not just health - after all most patients are involved with a variety of agencies and information sharing is a key factor in meeting their needs.'

Some respondents did raise issues of confidentiality in sharing patient information, but only in so far as they wish to have these issues clarified so that they can have confidence that they are working in a safe and professionally approved manner.

4.3.3   The involvement of clinical staff in the development of clinical systems

Many nurses responding to this survey reported that existing clinical information systems are often simply not suitable for the needs of their practice. In primary care for example, although the vast majority of GP practices have clinical information systems, nursing staff may not always be 'allowed' to use the system and share information with their medical colleagues. Even where they do use these systems, they may be forced to use a medical model which may not be suitable for recording the nursing aspects of patient care. Lack of nursing input into the design of the systems they are expected to use was given as a major reason for the inadequacy for nursing practice of some clinical systems, in both acute and primary care.

Because this was an 'online' questionnaire, the respondents to this survey were likely to be more familiar with IT systems than some of their colleagues, but what these nurses want is

involvement in the development of the information systems they will be expected to use in their everyday work and the care of their patients. It is self evident to many of them that they are the people who know what functionality is required of these systems, and yet the results from the quantitative analysis of the questionnaire (RCN 2004) shows how little involvement most of them have had in the ICT National Programmes to date. These programmes are producing clinical information systems for use in patient care, and as nurses are the largest group of clinical professionals their requests to be involved in systems design and development seem entirely reasonable.

'With regards to information regarding electronic records and other IT projects, very little information is making its way to grass roots of nursing.'

'Trust managers need to employ nurses' with knowledge and an interest in IT to work between the clinicians and the IT department to ensure that systems are developed that are functional for nurses and other health care personnel.'

'I feel that nurses need to be consulted thoroughly about any new technology. Often millions of pounds are wasted because 'experts' have failed to grasp the issues facing practitioners on an everyday level.'

'Talk to the ground floor workers...ask us what we need...'

'Of course it is essential to speak to the end users of the systems, how can such a change be anticipated without planning to talk to those of us who will have to use the system every day!?'

'Nurses must be involved with any changes from the start to ensure empowerment. Remembering back being newly qualified in the early 90's to as I am now as a specialist in tissue viability I have always responded better to change when I have been actively involved.'

'A national nursing IT group with nurses and midwives of all types and grades to work on and develop systems that are specific to nursing needs.'

Comments like these indicate a constructive approach to the National Programmes for IT, and the willingness of nurses to take an active part in ensuring that implementations are practical and successful. Despite the large sums of money that are being invested in ICT and the National Programme for Information Technology in England, the clinical and technical skills and experience needed to see the project through to successful implementations within the planned timescales, is in short supply. The response to this questionnaire demonstrates that there is clinical knowledge, experience and enthusiasm that national programmes should be both engaging with and capitalising on, as effectively and as quickly as possible.

4.3.4   Lack of access to IT equipment

Nurses want clinical information systems that will support them in the management and provision of patient care, but what they also need is adequate and appropriate IT equipment on which to run these systems. The current experience of many of the respondents is of a lack of access to up to date IT equipment or indeed to any IT equipment at all. As one said:

'Access to a computer would be a start. Most district nurses in my area don't even have a computer.'

A number of the nurses reported that although they now have email addresses, they don't have access to a computer in the place where they work, or it is in an inaccessible place, or they have to share with so many other people it isn't a useful tool. Often where they do have equipment it is much older and slower than computer equipment they have used in university departments or at home. Community staff don't have the mobile devices that could make a considerable difference to how they manage patient information, and hospital based staff too, have to queue to use the ward computer (which may be in Sister's office), when mobile devices or bedside computers are what they require. Having to hand write information and then input it into a computer later is another way in which nurses are taken away from direct patient care, there is duplication of effort, and time is wasted. The proposed ICT strategies are set to address these needs, but the respondents make it clear that boxes and wires are not enough. There needs to be more research and consultation with clinical staff about the kinds of devices and the location of computers, if the benefits of electronic records are to be realised.

4.3.5 Adequate and appropriate IT training for all staff

Insufficient IT training was one of the issues raised most frequently by the respondents. Their problems range from no training at all, and just being expected to 'get on with it', to being trained but then having no system to use in practice. They find that the computers on which they train are far more up to date and therefore unlike the systems they have to use in their work place, and that training can be rigid and not matched to the individual's learning needs. Being released from the clinical area is a problem as there may be no provision to 'back fill' for those in clinical posts, and some have to undertake training in their own time. For example:

'I have had IT training given to me by my NHS trust, which has been excellent. However it is difficult to get a place on the training course, and even harder to take time out from a clinical area, as IT not seen as essential when staff numbers are low.'

Some nurses have undertaken computer courses on their own initiative, for example doing the European Computer Driving Licence (ECDL), and then not being credited with this knowledge, or having no scope in which to put these skills into practice. A number of the respondents had done or were doing Masters Degrees in health informatics and commented on the difference between what they were learning and doing in the universities and what they found in practice in their NHS workplace. There is a perceived inequity in the provision of IT equipment and in training, between different areas of the country and between acute and primary and community care, and between different specialities. Examples of their comments give an indication of the work that will be required by NHS ICT programmes to ensure that all staff are prepared for the new NHS care environment:

'There must be adequate training before the system is introduced, and there must be adequate time provided for people to practice/become competent, as well as adequate access to computer terminals.'

'Unless full training and support is in post I feel this exercise would not work properly, and would probably be detrimental to all concerned.'

'Investing in IT will work only if adequate time is given for training and hands on practice is made available to all users.'

'There needs to be dedicated time for training in IT as some people feel threatened by IT, and there should be backfill monies so as not to leave clinical areas short staffed.'

'The IT sector is constantly changing and so fast that updates on IT evolution should be part of continuous training like manual handling, fire and CPR just to make sure we use "IT" to its full potential, ECDL etc...'

'I am committed to the idea of using the abilities of IT to make systems more efficient and effective and to enhance patient care. However, I do not think that those at "the top" appreciate that many nurses do not have IT skills and therefore the training issue is an enormous one.'

'There is so far in my work place insufficient support for IT training. The usual problems persist of insufficient time within the workplace to learn or consolidate the learning.'

'Emphasis on training to include change management for the staff to understand the benefits, otherwise it will fail before it starts.'

'Junior nurses and those who are less keen on technical challenges are usually left out in initiatives like this. In order for the IT Development in the NHS to be significantly effective, every nurse should be supported, empowered and motivated to acquire and continuously improve their IT skills. In view of this, time should be created for nurses to be able to attend training sessions. Training cost should also be available so that managers don't have to be very economical about it.'

These comments show how important nurses believe not only technical training to be but also how they see these developments to be part of a wider change management programme the benefits of which have to be communicated to clinical staff at all levels. These nurses want training that recognises individual learning needs and abilities. They point out that some nurses have no familiarity with computers at all, whilst others are already very skilled, and a 'one size fits all' approach won't do. Nurses recognise the need for IT trainers to be skilled to cope with varying levels of computer competency. They want dedicated time for training, not to feel that patient care is suffering while they are away from the clinical area, or to feel that their managers see it as an optional extra for them. Nurses who responded to this questionnaire see IT training as another set of skills to help them do their job properly. They want to see it as part of basic nurse training, and expect to be kept up to date with it in the same way as for other essential skills such as manual handling or resuscitation techniques. There is here too, the realistic view that training must include discussions about the benefits to patient care and changed ways of working that IT will bring to clinical practice.

4.3.6 Adequate and efficient technical support

Another major issue raised by the respondents to the survey was their need for effective, round the clock support from IT technicians, which is undeniably essential if the maximum benefit is to be derived from clinical systems. One of the current problems for nurses is lack of IT support 24 hours a day, even though they are providing patient care and using clinical information systems 24 hours a day. They are clear that the new programme must be able to provide high level and continuous IT support, as for example:

'Motivated training for nurses is very important and the technical support which includes a "what do I do" help line for all NHS employees is absolutely essential for acceptance of the system.'

And may be summed up by the comment:

'People working at grass roots level will be more willing to embrace new technology if they are consulted, trained adequately, have appropriate equipment to use, have an easily accessible back up service that does not take days to respond, and the end result is that an improvement in the delivery of client care/services will be achieved.'

4.3.7 Access to electronic education and knowledge resources

Nurses completing this survey might be expected to have a good understanding of the breadth of health care educational resources that are available electronically, over both the internet and local extranet systems, and access to knowledge sources was another requirement for the new NHS IT systems, as described by one nurse for example:

'Free access to learning resources, e.g. journals, e-books, interactive learning materials and animated materials to help nurses with issues such as certain physiological concepts. Also, instant access to clinical decision-making tools e.g. toxbase, prodigy, for ALL clinical staff.'

For many nurses in practice, especially those in the community, getting to a library for research or keeping up to date, so as to be able to truly practice evidence based care, can be very difficult, and they see the advantages of on-line access to journals etc. At present however, it is often those who have least access to libraries who also have least access to computer facilities, so connectivity to NHS Net and the Electronic Library for Health or the e-library for example are other aspects of the ICT programmes that will be welcomed by nurses.

'Access to key research and practice development sites for easy access for evidence based practice to be made easier for busy clinicians.'

Nurses can often find themselves working in relative isolation, either as a nurse specialist without colleagues in the same unit, or as community practitioners in rural areas. For these nurses IT offers the possibility of creating networks and providing opportunities to share knowledge and experience. Some referred to the use of video conferencing as it is used for continuing nurse education for community nurses in Wales.

'Interlinking of specialist groups/units to share information and knowledge.'

4.3.8   Standardisation

Nurses described the problems they have with lack of standardisation in records and in IT systems, and this is one of the issues that they see as crucial for the NHS IT programme. What is wanted is:

'A standard system across the NHS for data collection, records quality, targets etc. The current lack of standardisation is frustrating and limiting.'

Nurses see the potential practical benefits of NHS ICT programmes and are ready to welcome a system that will be:

'A standardised system that would be available all over the country, that way when staff changed trust/job they would still be familiar with the system. Less time would be spent on having to retrain staff to use new systems, thus reducing the amount of time required for training and unnecessary retraining. Regular updates could be passed on, and professional staff such as nurses and doctors would be able to spend more time doing what they trained to do.'

Nurses want and point out the advantages of having a system that is used across the UK, and the possibilities this will create for standardising on good practice throughout the NHS. This will be an important issue as each cluster in England develops its own systems, and Wales, Scotland and Northern Ireland have still to take their own programmes forward. The respondents want standardisation but they also want the ability to customise programmes for local use, and some specifically said that they wanted to be able to enter free text into their record systems.

This section on what nurses want from national programmes for IT could be summarised by the following quotations from the survey:

'For the implementation of IT systems to be effective these systems must be fully integrated and careful access to be granted to maintain confidentiality and data protection. We must also ensure that the data sets are carefully constructed so that we are clear what information is being collected and reported when it comes to statistics. The users must be consulted as to what 'they' need to make this work! There must also be a commitment to good quality training programmes for the users. Personally I can't wait, this will be a giant leap forward if it is done properly.'

4.4   What specific IT projects do nurses want to see in the NHS?

The questionnaire asked the respondents what IT projects (if any) they would most like to see implemented in the NHS, and over nine hundred of the nurses answered this question. Just over twenty of these gave a negative answer or replied that they were unsure, but the rest produced a very wide range of projects. Some suggested projects that are already working in some places, some that are planned, and some that were the product of their familiarity with IT and their imagination. The most frequently mentioned project was an integrated electronic record system and secondly good IT training. The response to this question shows how the

National Care Records Service will be welcomed by nurses, but it also shows how they recognise the need for and value IT training and education to enable them to get the best out of these systems for themselves and for their patients. The list of projects also includes electronic prescribing, e-booking, electronic test ordering, electronic results reporting, Picture Archiving Systems (PACs) , staff rostering systems, car navigation systems for community staff, human resource systems (standardised across the NHS), pay roll systems, some decision support systems such as on-line advice for drug calculations, automated diary management for meetings and bar code ID for patients. Various applications of telehealth were mentioned by a number of respondents, who wanted to see it used for patient consultations, for patient monitoring and for professional education. Electronic handovers were suggested, and smart cards for patient held records. Email access for communicating with colleagues within and across organisations and for communicating with patients, was also requested. Internet access for education and for retrieving information was mentioned by a number of nurses in response to this question. Nurses wanted to see routine tasks automated, such as the production of discharge letters, and some had specific applications they wished to see in their own area, such as support for child protection procedures.

Much of the IT development suggested by nurses in this questionnaire is already underway or is part of some ICT NHS programmes Responses to this question suggest that nurses can see very practical ways to use IT in their practice and will welcome it, and it suggests that this strong mix of imagination, practicality and enthusiasm should be capitalised on by the NHS immediately.

4.5   What are the benefits the respondents expect from NHS IT projects?

Many of the benefits of IT in the NHS for these nurses will be the resolution of the issues outlined above, but the respondents also described other positive outcomes from the introduction of IT into their workplace. They expect to see improvements for their patients and in patient care, and they expect improvements for staff and for the organisations as a whole.

4.5.1   Benefits for patient care

The primary benefit expected is in the ability to provide consistent, patient centred care. They expect IT to support multidisciplinary and multi-agency care, which should then become both safer and more efficient. They expect to have more time to spend with their patients if they can spend less time on paperwork and less time having to search out information by phone or in different sets of notes. It will be possible to manage the whole care process in a more efficient way. For example, they said:

'IT is essential to support the work of the practitioner, time is often wasted repeated information is collected and mistakes are made because comprehensive record data is not available.'

'Real partnership working on the ground will not seem real to staff until there is the ability to not only share records but have access to the information each hold particularly with regard to services delivered to people.'

'If the amount of paperwork can be reduced this should free up nursing time to spend physically with their patients therefore improving patient care. This may lead to quicker recovery and shorter hospital stays.'

'Greater use of clinical programmes i.e. for the completion of integrated care pathways etc. ANYTHING that prevents me writing out the same details hundreds of times a day - I write the same four pieces of information up to 35 times when a patient is admitted!!'

'The communication between secondary and primary care through IT, I feel is particularly important. Would avoid a lot of duplication, misunderstanding and patient care would improve'.

'Integrated health records, i.e. single assessment (electronic) as a new intermediate care service it would be fantastic if social services, GPs, health, councils etc were all linked, this would stop duplication and wastage of time.'

The respondents expect to be able to improve patient care through having electronic access to care pathways and protocols, and expect their ability to provide evidence based care to be generally enhanced. They expect records to be more legible than the current paper based records, and that this should lead to fewer mistakes. The single assessment process in particular, should be greatly helped by the introduction of electronic records.

The respondents expect there to be better information available for patients and for them to have the opportunity to review and update their own records. Telemetry should make it possible for patients to be cared for in their own homes in circumstances where this is not possible at the moment. They expect the patient journey to become smoother and for patients to have more choice.

4.5.2   Expected benefits for staff

Benefits for patients are benefits for staff too, and nurses will particularly welcome simplified record keeping, less paper work and reduction in duplication in gathering and recording information. Time will be saved, communications with colleagues improved, there will be the ability to promote consistent care standards across the UK.

4.5.3   Expected benefits for the organisation

The respondents can see the advantages of electronic records that go beyond direct patient care. They described how data will be more readily available for all the 'secondary uses' processes. The process of clinical governance will become simpler, as evidence of patient care will be readily available. Audit will be easier and it will be possible to give staff feedback on their practice. Data will be available for research and for epidemiology. Cost data will be more accessible. The respondents expect that bed management, risk management, benchmarking data, theatre lists, clinic lists, workload management will all be improved with the use of IT. The list of potential benefits is long and is summed up by the comment:

'I think it's a very ambitious and exciting project, and I very much hope it is a success.'

4.6   What negative things do respondents expect from the introduction of IT?

Although the vast majority of the respondents look forward to the benefits that the introduction of IT projects will bring to the NHS, they also perceive some risks, as for example:

'Too little information and training is being given regarding this significant change to nurses' everyday work. This goes against all that I have come to understand about the process of change and is likely to lead to uncertainty, resentment and disillusionment among participants.'

The use of IT within the NHS is a necessary advance in patient care but I am concerned about training and equipment, also how temporary staff/students will access records, what provisions would need to be in place to maintain confidentiality if electronic integrated patient records are set up. Also integrated patient records are not currently being used in many places and it will need a change in culture for all professionals'

4.6.1   Inadequate systems

There is concern that inadequate systems will be implemented and imposed on nurses, and that there will be insufficient hardware, or that the NHS will purchase inferior equipment that will be unreliable and not kept up to date. Issues of equity in provision and access to computer systems were raised, and concerns about the ergonomic issues associated with computer use. There is concern about how systems will be introduced and about lack of proper training tailored to the needs of individuals. There is a fear that it will be a means for managers to 'control' staff and that there will be a loss of personal contact between staff.

'It will depend how good the system is! Currently I struggle with the antiquated systems where I work and they are more of a hindrance to my job than an asset, but I like the new NHS net, but it is quicker for me to access and use it at home!!'

'I am fully supportive of the information technology expenditure, however, want assurances of equity of the service. Will all of the equipment go to the teaching hospitals?'

Some of the respondents were concerned that the new systems might be difficult to use, that they might be expected to keep computer records and paper notes, and some were concerned about whether nurses would be expected to manually enter the data to 'load' the new systems.
The respondents point out that so much depends on the suitability and design of the clinical systems, and just how 'fit for purpose' they are. There is anxiety that the new systems will be unreliable, that they will not be available 24 hours a day, will fail and that there will be inadequate back up.

4.6.2   'Technophobia'

Some respondents raised the issue of the difficulties for older staff who are not familiar with computers, and 'technophobia' was suggested as a problem by a number of people. There

was a fear that some staff might be obstructive or that there would be a general apathy about the IT developments.

Some were anxious about losing narrative nursing records and being forced to choose from tick boxes in the new systems. There is fear of 'information overload' once electronic access to knowledge sources is readily available.

4.6.3 Will IT be detrimental to patient care?

There was a fear that the use of IT will create barriers between patients and staff, and that the use of IT may take staff time away from direct patient care. This ambivalence about whether IT will reduce or increase information recording and whether it will give more or less time with patients is very understandable. Some staff will have no first hand experience to base their ideas on, and others may have had experience of poor information systems that do not meet nurses' needs.

4.6.4 Will this be another Government IT disaster?

The respondents had some concerns about IT and the service as a whole. There was a view from a small minority that the money being spent on NHS IT systems would be better spent on more clinical staff. There is concern that 'history may repeat itself' as previous IT disasters in the NHS and public sector do not inspire confidence in nurses that it will go smoothly this time. There is fear of yet another expensive failure. Some nurses are concerned about poor equipment or lack of equipment, and about systems just being unreliable. Some are afraid that staff have waited so long for computerised information systems, or have only ever had experience of inadequate systems, that apathy or disbelief that ICT programmes will deliver the promised advances, will cause the programme to fail. Lack of training and lack of technical support are again seen as factors that could cause the programme to fail.

'Let's get on with looking after the patients. This all reminds me of "resource management" from the 1990s, which was an expensive waste of time'

'Very anxious that this will turn out to be a white elephant with incorrect use of funds'

'With the immense problems of staffing, excess patients on wards, dirty wards, pressure on beds most nurses feel bogged down with everyday problems and the thought of more "innovations" will be greeted with apathy, although using the computers is a way of excluding oneself from the "frontline" i.e. I must input this or I'll lose my screen and have to start again" the wards feel like war zones, trying to get patient care of an acceptable standard should be the priority at the moment, I am sure integrated electronic records will bring a better and cohesive standard, but tackle the most immediate problems first, insufficient beds, insufficient staff, low morale.'

There was concern expressed too, about the possibility of unforeseen problems arising with the introduction of the new systems and about the adequacy of the research base underlying it. Some expressed concerns about confidentiality and security of electronic record systems.

5.   What are the underlying issues that respondents think have to be addressed for modernisation programme?

There are a number of issues that appear as constant themes throughout the responses to the questionnaire, which it is clear that the respondents believe have to be addressed if modernisation programmes such as the NPfIT is to be successful.

5.1   Information sharing

The National Programme for Information Technology, as are other UK programmes, is welcomed for the ability it will provide for shared records and information sharing between and within organisations, but this will raise other problems that respondents believe must be addressed. There are questions about security and confidentiality of patient information that nurses want assurances about, and they particularly want guidelines within which they can work and share information with confidence. Guidance for sharing information outside the NHS is especially necessary. Nurses also want to be clear about accountability for record keeping in the integrated patient record and this too needs new guidance from the professional bodies. They want national standards for electronic records. They want to be able to address the problem of different professional languages, so that they can share information safely and easily. The systems have to make patient records available 24 hours a day, wherever the patient is.

5.2   Equity in IT provision across the NHS

The respondents want parity in IT system provision within the NHS and across the four UK Home Countries. Health care providers outside the NHS (eg in the independent sector, the Channel Islands) also want parity and to have their needs taken into account as they also provide care for NHS patients. Parity is required too in the provision of IT equipment, in IT training and in IT technical support, as at present there is perceived to be inequity between staff groups, between primary and secondary care and between areas of the UK. Training and technical support are issues of paramount importance for nurses. Training has to be provided early and has to be constantly updated.

5.3   Exploiting nursing informatics

Many of the respondents describe the need for practising nurses to be involved in the development of the systems that are supposed to support the care they provide. There is perceived to be a need to develop and use a group of informatics nurses who are able to make the link between nurses 'on the ground' and the technical system developers. The need for more informatics research was also raised.

5.4   National Standards

There is a need to recognise that the nursing workforce is mobile and that national standards are needed so that transition from one institution to another can be easily made. National standards for practice are required for the same reason, as it is felt that the NHS should be providing a common standard of care across the country.

6.   Conclusion

The 2,020 nurses who responded to this survey have shown themselves to be generally positive about the introduction of the Integrated electronic health records. Even those who had heard little about NHS ICT programmes can see the benefits for themselves and their patients in having integrated patient records, and they positively welcome these developments. They are very clear about the advantages of electronic records and realistic about the issues that have to be solved if the new systems are to provide their full potential.

The respondents identified a number of major issues that have to be addressed if the NHS National Programme for Information Technology is going to meet its primary objective of modernising the NHS and improving patient care. These issues include:

- that nurses should be involved in the development and implementation of all new information and record systems that have a nursing component
- the development of systems should take account of existing nursing and health informatics research, and make use of nursing informatics expertise
- that there must be adequate and appropriate training for all nurses using new clinical systems
- that the new clinical systems must be available 24 hours a day
- that there must be adequate technical support 24 hours a day
- that all the implications of the new ways of working must be fully explored with all staff, in every sector of the NHS and in external organisations, ahead of implementation
- there must be clear guidance on confidentiality of patient information, and on information sharing, from the Department of Health and from the professional bodies
- security of systems must be assured
- there must be clear new guidance on accountability in electronic record keeping from the professional bodies
- there must be equity in access to computer hardware and devices across the NHS
- there must be equity in access to electronic knowledge systems across the NHS
- nurses should not be expected to undertake IT training in their own time and at their own expense.

Electronic record systems are eagerly anticipated by many and their views are summed up in:

'I have just joined an NHS trust hospital that has electronic records etc. first time for me, and it's brilliant!'

'I am a very keen supporter of the use of IT to enhance clinical and non-clinical staff in delivering a patient focussed service more efficiently. I have first hand experience of electronic prescribing and administration that clearly demonstrated its effectiveness in an acute hospital setting.'

'Staff really are **positive & willing to learn** - esp. when they do see benefits from ICT efforts (small client register). Lot of really positive work - collaboration taking place'

..'otherwise one of the biggest potential gains will be lost or damaged. Simplicity and ease of access and usage need to be fundamentals. Users are going to be very busy people. This is a great opportunity to improve care with vastly improved communication. Let's not waste it!'

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