

Refereed paper

The NHS Information Technology (IT) and Social Care Review 2009: a synopsis

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ABSTRACT

Background England's National Health Service information technology (NHS IT) has been much criticised in a number of major governmental and non-governmental reports. The author was requested to write a review of NHS IT to help formulate policy.

Objective To identify what had worked and should be continued and what was unhelpful and should be dropped from NHS IT.

Method Iterative process of debate with a committee of experts.

Results The theme areas which emerged were:

- the central importance of the record to serving individual patient care, and that this should be top priority

- development of systems should be carried out as close as possible to the front-line clinicians who use them
- standards and frameworks are useful centralised functions; whereas imposing detailed technical solutions across large geographical areas is unlikely to succeed and should be abandoned.

Conclusions IT should be seen as a clinical tool in health care, developed to meet the needs of patients and front-line clinicians.

Keywords: computerised medical records systems, computers, health policy, medical informatics

Introduction

'If we did well what we know now that would create a more significant improvement in care than any major advance in medicine that is likely to occur in 20 years.'¹

Professor Muir Gray

I was commissioned to conduct this review² against the background of frustration with the current delays and high costs of England's NHS IT.^{3,4} My remit for the NHS and Social Care IT Review 2009 was to:

- establish how clinical, public and management needs can most effectively be met by information technology
- in the light of the developments and progress of the last few years, establish a vision for IT in the NHS, health and social care
- set out a strategy for achieving that vision, including a workforce strategy
- advise on action for the current Government to take

- advise on the policy options to be considered for implementation by an incoming Conservative Government.

Method

I decided to adopt a way of working similar to that used in Parliamentary Select Committee processes. I put together a team of experienced health informatics personnel who were also clinicians. This was deliberate, as the voice of clinical staff has not been heard as much as it should.

Once the team was assembled we deliberated on what areas we wished to consider. This resulted in a series of questions asking for evidence which were sent out to as many stakeholders as possible, including

through the pages of this journal.⁵ The questions were also distributed via the media to the whole community. Once the deadline for written evidence had passed we invited a large number of those who had provided written evidence to a series of oral hearings in the Palace of Westminster to enable us to challenge what had been said. The results of both these processes, plus some internal investigation of sources, were then compiled as the evidence part of the report. From this a series of recommendations was drawn up.

Results of the review

Highlights from the evidence

One of the most frequent comments was that the commercial contracts negotiated as part of the National Programme for IT (NPFIT) have been a hindrance to the widespread use of IT in health. This was included with the 'one size fits all' approach to electronic records, which is not working. Much of this was about the delays in implementing NPFIT and in part was about the secrecy of the contracts, which meant that many were suspicious of them.

It was stated that most innovation comes from the smaller suppliers who are excluded from the main contracts. The attempt to resolve this by having the Additional Supply Capability and Capacity (ASCC) contract was thought to be too restrictive to allow smaller suppliers to be involved.

Another point often stressed was the saying 'The perfect is often the enemy of the good'. This was thought to apply to standardisation, functionality requirements and commercial decisions, where it was suggested that there could have been extensive improvement in the implementation of existing systems even if they did not exactly fit the defined requirements.

Indeed many NHS trusts wanted to keep their current systems and add to them in order to evolve towards a future model rather than having to replace the current models. Trusts also stated that they wanted to have a choice of systems rather than being told they had to have one of which they had no sense of ownership.

The perception that all medical data would be stored centrally on the National Spine caused many comments from all parts of the NHS and its customers. The recent problems with many central databases meant that no one trusted central government to hold data.

Box 1 Strategy and use of clinical data

Strategy

The purpose of IT in health and social care is to improve quality of care. Thus its main use should be to support the patient–clinician interface

- Too many clinicians are suspicious of IT and do not understand its benefits to them. We must improve clinician awareness of the benefits
- Managers must see IT as a clinical tool not just a data collection technology
- Everyone must understand the importance of the data they collect. Data quality must pervade the whole service
- If we are to communicate and to use data successfully a standard terminology and structure must be used
- There is no need for centralised systems except as directory services. To ensure confidence amongst patients, keep databases local.

The capture and use of clinical data

- Health data should be collected as part of the care process, not as an additional, and thus distracting, process
- Avoid silos of data
- Management should derive their needs from clinically collected data
- Managing the NHS by targets has failed and needs to be replaced by management by outcomes. Real clinical outcomes are notoriously difficult to define and collect. While they are being developed patient recorded outcome measures (PROMs) will provide a snapshot assessment of the subjective experience of patients. They have not been proven to provide clinical or long-term measures. More work is required on the various methodologies available
- Patient involvement in their own records should be explored
- There are proven methods of improving user acceptance and improving data quality. Support services such as PRIMIS + should be extended

The other big area of evidence was about the professions being more involved in the choice, implementation and management of IT systems. Also it was felt strongly that the clinical profession must develop standards for the use of clinical electronic records and educate new entrants in the wider aspects of health informatics.

- no tools to extract data – i.e. secondary use of data, for management or other purposes, should not drive system development.

The patient must be at the centre of all information systems; the provision of patient-level operational data should form the foundation of NHS IT

In order for patients to reap the benefits of information technology in relation to their health care, there must be a change in the way information technology is supported: the NHS Executive must not regard health informatics as a tool to extract data from the NHS but as a way of organising health and social care information around the needs of the patient. Systems must be able to deliver clear benefits to the care of the patient and to the work of the clinician in delivering this care. They must not be seen by clinical staff as solely systems for data collection. The dataset mentality, where the bulk of data collected bears no relevance to patient care, should be abandoned. Clinical systems should be built to focus on the patient, not the disease, procedure, specialty or service providing care. These requirements should be met by developing

Overall recommendations

From the evidence, written, oral and extracted from the literature, the team came up with a series of recommendations. They are summarised below.

The patient must be at the centre of all information systems:

- only patient level operational data should be collected
- clear benefits to patient care.

Avoid spurious drivers of information systems:

- no ‘dataset mentality’ – i.e. collection of complete dataset/process data should not become part of the clinical process

Box 2 System architecture, procurement and social care

System architecture

- Trusts’ use of legacy systems can continue where relevant
- The NHS Executive should facilitate a choice of IT solutions for trusts
- Further investigation is required into the use and role of personal health databases
- Data must be stored and accessed locally on interoperable systems that release on the basis of patient need
- Open Source may be a valid and cost effective solution to procurement in some sectors
- A centralised IT support body should control standards for systems and ensure value for money only

Procurement

- All procurement should be based on centrally set standards and functionality
- A means of assessment and accreditation of systems to prove that they conform to these standards needs to be performed centrally. Those systems which meet the standards would be continued in a catalogue of successful systems with agreed NHS prices. The decision on which system to choose from the catalogue is a local choice
- The Government should avoid signing any more large, central and inflexible contracts
- The quality of informatics staff should be strengthened so that local choice and procurement of systems can be supported by on-site expertise

Social care

- The Department of Health, the Department for Children, Schools and Families and NHS Management Boards must share information about their plans and strategies for information systems
- Information-sharing between health and social care to be taken forward as a mainstream facet of any future work programme
- The Department of Health should issue guidance that supports local government in developing nationally consistent data standards and definitions across all 150 councils with adult social care responsibilities
- The Department of Health’s role in relation to leadership and resourcing of information strategy work should be reviewed

appropriate views on the patient-focused record according to the context in which the patient is seen.

To this end, the provision of patient-level data must be the main driving force for information systems in health care, reflecting the recent shift in strategic thinking towards organising the health service around patient outcomes. Other uses of data that are not of direct relevance to the patient should be considered as of second tier importance.

Subject to any applicable constraints, halt and renegotiate the Local Service Provider (LSP) contracts to save further inefficiencies with regard to cost and delivery

Many of our witnesses suggested that the presence of LSPs in the NPfIT was a key factor inhibiting delivery. There needs to be a wider choice of supplier to enable trusts to select cost-effective systems that cater for local needs. A number believed that a closer liaison between the application providers, who understand the dynamics of health informatics, and the trusts, who are familiar with their own local requirements, would be an improvement.

Redefine the systems required for a national infrastructure, ensuring that all functions that are amenable to localisation are decentralised; consider alternative solutions to one monolithic central spine of data. Health data will then be stored closer to the point of patient care

The concept of a national database of health records has caused extreme anxiety in many individuals and organisations. Irrespective of how well-founded or unfounded those fears are, a central database is not required in a localised vision of NHS IT. Strategy should move towards localised electronic medical records databases at hospital and general practice level, with the ability to transfer data between them when necessary. Only the services which unequivocally require a central architecture should be provided centrally. Localised electronic records will enable the patient to take a more active role in their health data within the trusted environment of the patient–doctor relationship.

Provide for standard setting and catalogue procurement centrally so that the patient can experience a joined-up approach to their care through information systems that are interoperable. The catalogue should encourage smaller providers to innovate and compete to create local solutions that better meet the needs of patients and the clinicians providing their care

Local hospital and community health service bodies ('trusts') have shown that they require choice and will demand it. To provide trusts with both choice and interoperability, national standards for functionality and data are required, along with a national accreditation scheme for information systems. Standards must be set centrally to ensure that local systems can communicate with one another. Systems which succeed in gaining accreditation can enter a catalogue in which the prices of solutions have been centrally agreed. Trusts can then select a system in the knowledge that it is compatible with the NHS as a whole and yet choose a solution that meets local needs. National funds should only be available for purchase from suppliers who meet these standards. The accreditation process should ensure that systems have sufficient longevity and flexibility to integrate with future technologies and that a variety of systems to suit a range of local needs qualifies for inclusion in the catalogue. The accreditation system should meet the highest professional and technical standards of system testing.

Devolve all else to local trusts, including choice of system. Allow local trusts to purchase from the central catalogue the system that they judge to be most appropriate for their patients and staff

Each component of the NHS is slightly different from the rest. The geography, the type of population served, the kind of services delivered and historical factors all mean that local trusts must be funded to make the purchasing decisions which will best suit their particular needs. It seems entirely inappropriate, for example, that under the current programme a system which works well in a large London teaching hospital with its academic, research and tertiary services is forced into a small rural local district hospital with no regard for the differences in services and patient care.

Enable local health communities to join together and use integrators to manage the move from existing legacy systems to new systems. Integrators can help to update, rather than abandon, successful legacy systems so that they are interoperable and conform to the national IT strategy

If the procurement process is opened up to suppliers outside the LSP contracts, there will be trusts who do not believe they have the skills to make decisions on the implementation of information systems or to control the migration of the trust from legacy systems to new solutions – a role that was previously the remit of the LSPs. Local health communities who decide they do not have the skills required to manage the implementation process themselves – who share common needs rather than just their geographical location – could outsource the implementation of systems. Trusts who wish to pursue their own implementation strategies must be free to do so; the use of an ‘integrator’ should not be mandated from above but should be an option for trusts to consider at a local level.

Assess the cost-effectiveness of the current NPfIT according to the benefits that can be derived for patients

The opportunity cost of the National Programme long ago reached the point where it became disproportionate to the intended benefits of the NPfIT to the NHS. The centralised procurement and implementation structures of the programme have created diseconomies of scale. These inefficiencies require a rigorous and robust reassessment on the part of the Government. A more practical assessment of the costs should be a priority for the NHS Executive: a re-evaluation of the programme’s cost effectiveness should be driven by the benefits derived for patient care. The review group is not in a position to assess the cost of the programme due to not having had sight of the contracts: these contracts have been withheld from the public and parliamentary domain due to commercial confidentiality clauses.

What is certain is that our recommendation to scale back and localise the centralised procurement arrangements of the National Programme through a catalogue of suppliers does point towards a more cost-effective approach to NHS IT. There is scope in this proposal for cost savings in the competition generated between suppliers and the reduction in the size and scope of a central management and support body (currently in the form of Connecting for Health).

The NHS must take a long-term strategic view of IT. The delivery of information systems should not be driven by political or bureaucratic timescales but by strategies that are focused on the care of the patient

The undoubted ability of health informatics and information systems to support health and social care will not be seen immediately. It takes time to test, develop and implement systems and it is vital that these systems are piloted extensively before deployment is given the go ahead. Whilst piloting takes time, it takes even longer for staff to become accustomed to using systems as part of their daily work and, after thorough training, to begin to exploit the opportunity to develop more robust working practices. Direct improvements to the NHS, such as improved patient care and cost effectiveness, are milestones that exist even further down the line. However, technology is changing and the NHS will lose out if it is permanently wedded to current technology and does not accept new technologies that have a positive and proven impact on patient care.

Seven action points to support the transition to a localised but coordinated IT strategy

1 Ensure all Patient Archiving and Communication System implementations are complete and successful

Patient Archiving and Communication Systems were being implemented successfully before the beginning of the National Programme for IT.⁶ They significantly enhance clinical access to a patient’s scan and x-ray images along the care pathway and are vital to patient care.

2 Encourage the development and deployment of electronic prescribing systems in acute trusts. These systems should be designed to improve clinical practice for the benefit of the patient rather than simply improving hospital administration

Waiting for the utopia of a detailed care record has prevented the NHS from developing other IT services in the acute sector that can benefit patient care. Electronic prescribing has the potential both to improve patient safety and drive down costs. The current programme’s initiative, the Electronic Prescription Service (EPS) project, is an administrative programme that focuses on primary care. It enables GPs to transmit prescriptions electronically. The legacy systems in primary care already alert GPs to prescribing errors and adverse reactions between drugs. A similar system of alerts would significantly enhance clinical practice in the acute sector. Concentrating resources on improving the administrative functions of prescribing, rather than exploiting the clinical benefits of e-prescribing

for patients in secondary care, is not an effective use of the NHS IT budget.⁷

3 Allow existing departmental systems that meet the required standards for interoperability and data sharing to remain in operation

Locally developed systems that can be adapted to achieve interoperability with the rest of the NHS should not be subjected to a 'rip and replace' strategy. Where there are good systems in place that fulfil local needs, every effort should be made to integrate these systems into the NPfIT so as to avoid unnecessary disruption to patient care and unnecessary expenditure on new systems.

4 Support the professional bodies in the development of clinical record standards and incorporate

these standards into mainstream professional education

Information systems can either help or hinder the care of individual patients, depending on how they are deployed. The Review Group recommend that the NHS Executive support the caring professions in recognising the importance of engaging with IT so that they can master its impact on the care of patients for the better. The initial steps already taken in providing best practice guidelines and defining professional record standards must be extended so that the formation of and adherence to information standards is perceived by the Royal Colleges to be as vital to the work of a clinician as standards on ethics and safety.

Box 3 Management, leadership, information governance and evaluation

Management of the service

- IT is not a solution in itself, it is a facilitator and should be treated as such by management
- Patient centric management strategies based on outcomes, not targets, should be implemented
- Managers should exploit the potential for IT to enable the following:
 - 1 Performance measurement according to outcomes
 - 2 Information sharing
 - 3 Training and education
 - 4 The management and monitoring of resources and services across the trust

Leadership and human resources

- Greater local ownership of the procurement and deployment of the NHS IT system will improve commitment at all levels
- The deployment of IT is primarily a change management programme
- Clinicians must also be engaged in the trust's change management strategies and selection of information systems
- Change management costs should be incorporated into trusts' business cases

Information governance

- There is always a tension between high strength security and confidentiality controls and the ease of use required to deliver patient care. This is particularly the case when data is transferred outside its source database. We must balance the risks of data sharing and patient confidentiality
- One of the main risks and thus one of the targets for improvement is in the normal staff of the NHS. There should be mandatory training in information governance for all staff
- The clinician in charge should be responsible for the patient's record
- Data monitoring via the Caldicott Guardians must be strengthened
- Audit trails must show who has accessed any data
- Any breaches of permissions should be assessed
- Build confidentiality into systems, rather than applying it afterwards. It is much more difficult to re-engineer systems if such controls are specified late

Evaluation

- There is insufficient evaluation of systems. In future, evaluation should be systematic and ongoing
- The views of end-users must be taken into account
- Evaluation must start before the beginning of a project to ensure adequate data for assessment. Also, implementation of systems should not be a foregone conclusion as it should depend on the results of the evaluation
- Evaluation can be disruptive, obstructive and costly. Thus it must be proportionate to risk, cost and complexity

5 Develop an educational programme to inform trust boards on how to manage IT implementations. Promote the implementation of IT as a mainstream activity for local trust managements

One of the stumbling blocks to clinical engagement has been the lack of interest and expertise at local trust board level. While targets have taken precedence, IT has been overlooked as a strategic driver for improving patient care. Consequently, the development of IT has been left to staff lower down the management scale who do not have the power to champion it effectively. There have been beacons of success but these are isolated examples. Trust boards should be trained to recognise the relevance of IT in improving patient care and to actively supervise the choice and implementation of information systems.

6 Create a programme to develop professionalism and capacity in local health informatics staff

The effective use of IT in health and social care depends upon having the appropriate staff to manage and develop the use of information systems at local level. Health informatics staff are required to manage the implementation and maintenance of systems, to understand and govern patient records and data within clinical systems and to show others the meaning of such information. Presently, there are not enough of these professionals to ensure effective local management of information systems. This profession must be developed; staff should be encouraged to develop the skills required to meet professional standards in health informatics, and an adequate career structure should be created so that they can stay in the profession in the long term. It is suggested that the establishment of a career pathway for the field of health informatics and the recruitment of high quality staff become part of the skills agenda. In order to create a robust health informatics workforce across the country, the Department of Health should develop integrated policies in conjunction with the Department for Innovation, Universities and Skills.

7 Ensure a dialogue between the Department of Children Schools and Families, the Department of Health and Connecting for Health/the NHS, putting in place the appropriate information governance arrangements

Policy and organisational differences at the highest level hinder developments in information sharing between health and social care. Improved coordination is required at all levels to achieve good data management and sharing. Currently, social care is divided across two departments: the Department of Health oversees adult social care and the Department for Children, Schools and Families is responsible for children's social care. The two departments adopt different approaches to the sector. Efforts must therefore

be made to communicate plans and strategies to one another and, where possible, work together to develop compatible information strategies to aid communication between health care, adult social care and children's social care.

The full report can be accessed at: www.e-health-insider.com/img/document_library0282/NHS_and_Social_Care_IT_Review%5B1%5D.pdf

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CONFLICTS OF INTEREST

This was an unpaid task.

The author (GH) was asked in June 2008 by Stephen O'Brien MP, Shadow Health Minister, to chair an independent team of health informatics professionals to review NHS and social care IT. I made my political independence clear but that was what Mr O'Brien

wanted. I also agreed that our work would not be an attack on NPfIT. That may be a political tool but much has already been written and investigated about its failings.

The final version of the Review was handed to Stephen O'Brien MP on the 31 March. The Conservative Party then determined how it would respond to the Review and this response, plus the Review, were formally published on 10 August 2009.

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