

A C T I O N

Information for Health

An Information Strategy for the Modern NHS 1998–2005

A national strategy for local implementation



NHS

Executive

This document is aimed at key NHS decision-makers with an interest in and knowledge of information management and technology (IM&T), clinical professionals, chief executives, board members and IM&T practitioners.

Separate documents will be available to explain the strategy to other interested groups.

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Foreword by the Secretary of State for Health

“The challenge for the NHS is to harness the information revolution and use it to benefit patients.”

Rt. Hon. Tony Blair,
All Our Tomorrows Conference, Earls Court, London. 2nd July 1998

Following the General Election of 1997 we took over responsibility for the National Health Service and took on the task of modernising it so that it can provide top quality treatment and care in every part of the country. We are determined to ensure that in future the buildings, plant and equipment in the NHS match the excellence of the staff.

Our White Paper *The new NHS: Modern • Dependable* set out a demanding ten year programme. It is designed to ensure that the NHS provides a universal, prompt, high quality service which is as close to people's homes as can be achieved safely with current and developing levels of expertise and equipment. Clearly, information technology has a crucial role to play.

Up to now the use of IT in the NHS has not been a success story. Far from it. Lots of money has been wasted. Some important data has not been collected and used. Other data has been collected but not used. There has been too much emphasis on financial data to support an internal market at the expense of IT systems which could directly benefit patients. As a result, clinicians working in the NHS came to see data collection not as a help but as a hindrance to their work.

The Information Strategy we are launching in this report is not intended merely to put that right. It is a radical programme to provide NHS staff with the most modern tools to improve the treatment and care of patients and to be able to narrow inequalities in health by identifying individuals, groups and neighbourhoods whose health care needs particular attention. Our new information strategy will help staff do the jobs they came into the NHS to do and to do them better.

Using rapidly developing information technology clinicians will be able to draw on the expertise of others, sometimes over great distances. Test results will be dispatched in a fraction of the time it has taken up to now. Patient's details will be transmitted between primary care and hospitals rapidly and accurately. It will be possible to book hospital admissions over the phone at times which

suit patients. Analysis of the data will show up any variations in the cost and effectiveness of treatments. Area studies will reveal sources of ill health or inequalities in healthcare.

All this won't happen overnight. It will involve a lot of work. As with all our proposals for modernising the NHS, it will also involve detailed discussions with staff about what they want the system to provide and how best to provide it. But it has got to be done. A lot of people will have to change the way they work. The NHS can only face the challenges of the new century if it has the most modern information technology and systems in place. Nothing less will do for a service which looks after the health of the nation.

In the immediate future the most important non-clinical priority for the NHS must be to complete the work necessary to cope with the Year 2000 problem and make sure the NHS continues to function and function safely.

The details of this strategy are complex but the overall position is simple. We must grasp the opportunity which new information technology offers to improve both health care and health. All NHS organisations will have to play their part in delivering this key component in our programme to modernise and improve the NHS. Senior clinicians and managers throughout the NHS and senior members of professional bodies will have to show leadership and commitment. There are formidable educational, cultural and management challenges to overcome. But they are more than matched by the scale of the benefits the success of this strategy will bring for patients, professionals and the public.

A handwritten signature in black ink, appearing to read 'Frank Dobson', written in a cursive style.

Frank Dobson
Secretary of State for Health



1

An information strategy for the modern NHS

Information for Health 1998–2005

Introduction

'better care for patients, and improved health for everyone depend on the availability of good information, accessible, when and where it is needed'

1.1 Modernising Britain has been a central theme of the Government's programme since it came to office in May 1997. Crucial to that objective has been the drive to modernise the NHS, with the aim of "giving the people of this country the best system of healthcare in the world"¹. Better care for patients, and improved health for everyone depend on the availability of good information, accessible, when and where it is needed.

1.2 The purpose of this information strategy is to ensure that information is used to help patients receive the best possible care. The strategy will enable NHS professionals to have the information they need both to provide that care and to play their part in improving the public's health. The strategy also aims to ensure that patients, carers and the public have the information necessary to make decisions about their own treatment and care, and to influence the shape of health services generally.

'fast and convenient public access to information and care'

1.3 To achieve these objectives, the strategy commits to:

- lifelong electronic health records for every person in the country
- round-the-clock on-line access to patient records and information about best clinical practice, for all NHS clinicians
- genuinely seamless care for patients through GPs, hospitals and community services sharing information across the NHS information highway
- fast and convenient public access to information and care through on-line information services and telemedicine
- the effective use of NHS resources by providing health planners and managers with the information they need.

1.4 This chapter sets the scene for the new NHS information strategy by:

- placing it in the context of the Government's modernisation programme
- setting out the key NHS policies which the information strategy must support
- providing examples of the technology benefits we can expect
- setting out the strategic information objectives which the strategy addresses.

¹ *The new NHS: Modern • Dependable*, Cm 3807, December 1997

Modernising Government – The Information Age

- 1.5** In his foreword to *Our Information Age*, which sets out the Government's vision for the exploitation of new technology in Britain, the Prime Minister said:

“Information is the key to the modern age. The new information age offers possibilities for the future limited only by the boundaries of our imaginations. The potential for new electronic networks is breathtaking – with prospects for change as widespread and fundamental as the agricultural and industrial revolutions of earlier eras.

I want to ensure that everyone in the United Kingdom has the best chance to seize this moment – an information age which offers new opportunities for greater prosperity, and a better quality of life.”

- 1.6** The new information and communications technologies represent a major vehicle for modernisation, and are rapidly transforming the way we do business, receive services and live our lives. They are global and pervasive. Their speed and power is such that most sectors of the economy now have virtually no choice about whether and when to adopt them.

‘the Government ... must provide its services in ways geared to the convenience of the citizen and business rather than to the boundaries of Government departments and agencies’

- 1.7** The Government is both one of the most important service providers in the country and one of the most significant customers. It must provide its services in ways geared to the convenience of the citizen and business rather than to the boundaries of Government departments and agencies.

- 1.8** Today access to public services is too often complicated, slow and inconvenient. People often have to contact or visit different departments or agencies, each dealing with separate aspects of the same problem. Although many people do appreciate the service they get, it is easy for them to feel that the seven day, 24 hour world that they normally live in appears to have passed the public sector by.

- 1.9** Information technology can transform the way we live because it enables us to:

- communicate with people wherever they are
- communicate faster and more conveniently with a wider group of people
- obtain goods and services in different, more convenient ways.

- 1.10** Latest figures for the UK show that 6.2 million people have access to the Internet. UK companies covering 37% of our workforce now have websites and 33% of all companies will do business over the Internet. Digital technology is driving these changes, providing a shared language for computers, telecommunications, broadcasting and information. The rapidly falling costs of processing power make the technology progressively affordable.

- 1.11** Increasingly, telephones, interactive television and multimedia kiosks, whether in homes, shops, offices, libraries or the high street, will enable the public to receive advice or access a range of public services.
- 1.12** The potential impact of new information and communications technology on the efficiency and quality of public services is enormous. The Government is determined to ensure full advantage is taken of these opportunities in its programme to modernise these services. In October 1997 the Prime Minister made a commitment that 25% of government services should be accessible electronically by 2002. The forthcoming White Paper on “Better Government” will provide more detail.
- 1.13** Few, if any, parts of our society will be able to opt out of the new information age. The Government is encouraging managerial and professional leaders throughout the public sector to embrace new technology in the drive to improve the quality, efficiency and convenience of services to the public.
- 1.14** Developments in the NHS will need to take account of other public sector initiatives such as the Peoples Network for public library services, and the National Grid for Learning in schools. The aim is to ensure that there is an appropriate level of integration at the interface between public services and the citizen. Similarly the NHS must recognise its role in supporting such initiatives in other areas of public services.

‘few, if any, parts of our society will be able to opt out of the new information age’

The national NHS policy context

- 1.15** The Government set out its ten-year programme to rebuild the NHS in the White Paper *The new NHS* and the Green Paper *Our Healthier Nation*. The Government’s vision is of a modernised NHS that is:
- a national service
 - fast and convenient
 - of a uniformly high standard
 - designed around the needs of patients, not institutions
 - efficient, so that every pound is spent to maximise the care for patients
 - making good use of modern technology and know-how
 - tackling the causes of ill health as well as treating it.
- 1.16** Improving the health of the population and the standards of health and social care that people receive is a top priority for the Government. There is much room for improvement and a new approach is needed. That new approach is embodied in the strategy for renewal and reform to modernise the NHS and social services the Government has developed during the last seventeen months. The result is a major, sustained programme of change involving both central Government and local organisations.

1.17 The central purpose of health and social services must be to provide people with the services they want and need, within the available resources. The Government wants to help people get on with their lives with the minimum of disruption from illness or disability. People expect the health and social care system to provide them with the standards of service they have come to expect in other areas of their daily lives. This means ensuring that:

- information, services and support are available to help people remain healthy
- quick, effective and convenient treatment, care and support are available to help people when they fall ill or are finding it difficult to cope
- services are provided that enable people who are ill or vulnerable to live their lives with maximum dignity and independence.

The national policy programme

'the Comprehensive Spending Review provides the resources for the next three years to deliver modern and dependable services'

1.18 The Government has developed its policy programme to renew and reform health and social services in a coherent set of policies, to achieve the vision set out above. The main components of this programme are:

- *Our Healthier Nation* – The Green Paper places improving health and tackling health inequality at the forefront of the agenda for the NHS. Following extensive consultation with NHS and partner organisations, the forthcoming White Paper will set out proposals for concerted action across Government and the NHS and for partnership with other organisations to improve health and narrow the health gap.
- *The new NHS: Modern • Dependable* – The White Paper marks a turning point for the NHS. It rejects the divisive internal market and puts partnership and performance at the forefront of running the NHS. It sets out the management and funding mechanisms through which the health strategy will be achieved, how quality standards will be driven into all parts of the NHS, and how efficiency of services can be improved to release resources to further improve their quality. These proposals, elaborated in the consultation document *A First Class Service: Quality in the new NHS*, will have a profound effect on how healthcare is delivered in this country.
- *Social Services White Paper* – The Government's policies on the personal social services will be set out in the forthcoming Social Services White Paper. It will lead to radical improvements for those who need social services support; greater security and protection for vulnerable people; significant improvements in the management and delivery of children's services; more targeted and efficient personal support, based on clearer objectives and priorities; and assurance that Local Authorities will provide the quality of service and value for money that citizens deserve.
- *Comprehensive Spending Review* – Underpinning these policies have been wide-ranging spending reviews of the provision of health and social care. The reviews set out how services will be transformed including proposals for better joint working, more efficient and effective delivery of services and better value for money. They provide the resources for the next three years to deliver modern and dependable services.

- *NHS Charter* – These major planks of policy will be complemented by a new NHS Charter setting out a clear statement of patients' rights of access to services, focusing on the quality of service. The emphasis is not only on rights but on responsibilities and fostering ways of encouraging appropriate behaviour.
- The human resources strategy *Working Together* sets out proposals to ensure that people who work in the NHS are able to make the best possible contribution, individually and collectively, to improve health and patient care.

Information

- 1.19** All aspects of implementing these policies require the generation and use of high quality information. The information strategy for the NHS, *Information for Health*, is therefore a key element of the Government's commitment to modernise the NHS.
- 1.20** All NHS organisations must play their part in delivering this strategy. It will require the personal commitment and leadership of senior managers and clinicians to achieve the objectives of the strategy and to handle effectively the educational, management and cultural issues on which a successful outcome will depend.
- 1.21** To achieve the widespread improvements in health as envisaged in *Our Healthier Nation*, a broader community than the NHS will need to be involved. NHS and non-NHS organisations will need to collaborate and ensure that those best placed to improve health have the information they need to do their job efficiently and effectively.
- 1.22** An information strategy for the NHS must be driven primarily by a careful and comprehensive analysis of the information needed to support the service objectives of the NHS and the policy objectives of Government, as outlined above, and not simply by the technical possibilities.

'all NHS organisations must play their part in delivering this strategy. It will require the personal commitment and leadership of senior managers and clinicians to achieve the objectives of the strategy'

Key local issues

- 1.23** Key local issues that *Information for Health* will support are:
- collaboration between the NHS, Local Authorities and others in order to improve health
 - preparation and evaluation of Health Improvement Programmes
 - development of Primary Care Groups
 - improving the quality of care and supporting clinical governance arrangements.

Purpose of the strategy

- 1.24** The purpose of the new information strategy is to put in place over the next seven years the people, the resources, the culture and the processes necessary to ensure that NHS clinicians and managers have the information needed to support the core purpose of the NHS, in caring for individuals and improving public health.
- 1.25** The following pages highlight how information needs are developing and how technology can make a real difference in the NHS, and then set the specific objectives and outcomes that *Information for Health* will implement.

Technology supporting care

- 1.26** The Government has given clear notice of its determination to see that the NHS embraces new technology through the specific targets set out in *The new NHS*.



'the aim should be to exploit the new technology, wherever appropriate, to provide as much service as possible in or close to the convenience of the patient's home'

- 1.27** Information technology can undoubtedly improve NHS professionals' use of information in day-to-day patient care. There must be an equally strong focus, however, on the practical use of information and technology to provide direct benefits to patients in their use of NHS services. The aim should be to exploit the new technology, wherever appropriate, to provide as much service as possible in or close to the convenience of the patient's home.
- 1.28** The Government intends the new information strategy for the NHS to go beyond improving information for the use of NHS professionals. It will also improve the way in which services are provided, to maximise public convenience and satisfaction.
- 1.29** The NHS in the future must use technology in innovative ways to support this aim. For example:
- the vision for *telephone-based services* such as *NHS Direct* will be expanded, and the scope explored for it to be a single telephone number gateway to all sources of NHS and social care service and advice
 - opportunities in the field of *telemedicine* will be seized to remove distance from healthcare, to improve the quality of that care, and to help deliver new and integrated services. GPs will be able to send test readings or images electronically to hospital specialists many miles away and in the same way receive results and advice more quickly

- through *telemedicine*, nurse practitioners in a community minor injuries unit will be able to consult doctors in the local Accident and Emergency department, improving the quality of care and preventing unnecessary travelling and referrals. Specialists in regional teaching centres will provide on-line guidance and support to colleagues in local general hospitals or beyond
- *telecare* technology will be used to provide reliable but unobtrusive supervision of vulnerable people who want to sustain an independent life in their own home. Video links with electronic monitoring will allow community health and social care workers to “visit” patients at home more easily
- individualised *personal electronic records* will be developed to provide NHS professionals with 24 hour secure access to the information important to individual patients’ care, when required. This will immeasurably improve emergency care and ensure any professional involved in the care of an individual is up to date with their treatment
- *on-line services* will be provided for GPs and their patients, to make hospital appointments as required or diagnostic results when due. The sight of hard pressed NHS professionals rummaging about in buff folders or hand-writing referrals and test requests will be consigned to history as soon as possible.

Information principles and needs

1.30 The principles on which this strategy is based are:

- information will be person-based
- systems will be integrated
- management information will be derived from operational systems
- information will be secure and confidential
- information will be shared across the NHS.

1.31 These principles support the concept of “integrated care” outlined in *The new NHS* in which “the needs of patients, not the needs of institutions will be at the heart of the new NHS”.

‘the strategy is focused on delivering support to day-to-day clinical practice’

1.32 The new strategy will be based on the fundamental premise that good clinical and service performance management information will only flow if the strategy is focused on delivering the information required to support day-to-day clinical practice.

1.33 While it did deliver some important national infrastructure, the previous strategy, published in 1992, was over-concerned with management information, and failed to address the real needs of the NHS for information to help clinicians and managers deliver more effective healthcare and improved population health.

The new information needs

1.34 The new strategy will meet the information needs of four distinct groups:

- patients
- healthcare professionals
- managers and planners
- the public.

Patients

'patients and their carers are increasingly interested to learn more about their condition, the treatments they are undergoing, and the likely outcomes'

1.35 Patients and their carers are increasingly interested to learn more about their condition, the treatments they are undergoing, and the likely outcomes, as well as needing information to support them in day-to-day living with long-term conditions and in helping them access health and social care services.

1.36 The prime source of such information will continue to be the healthcare professionals with whom they are in contact, but it is important that all the information they get – whether directly from those professionals or other sources – should be reliable.

1.37 In addition patients are interested in understanding the outcome performance of those individuals and teams in the NHS who are treating them.

Healthcare professionals

1.38 Healthcare professionals need:

- fast, reliable and accurate information about the individual patients in their care
- fast, easy access to local and national knowledge bases that support the direct care of patients and clinical management decision making
- access to information to support them in the evaluation of the care they give, underpinning clinical governance, planning and research, and helping with their continuing professional development.



'... the previous IM&T strategy was widely seen to give undue priority to management information'

Policy-makers and managers

- 1.39** The fact that the previous IM&T strategy was widely seen to give undue priority to management information does not remove the need for NHS managers and planners at every level in the service to have good quality information to help them better target and use the resources deployed in the NHS and to improve the quality of life of patients and local communities.



The public

- 1.40** There is a vast amount of information which is potentially useful for these purposes and the information strategy should be concerned with ensuring the most useful information is captured in the most convenient way and is as accurate and up to date as possible.
- 1.41** The public wants the opportunity to access information such as good health and lifestyle advice. But people are also interested in understanding how the health service is performing in the delivery of healthcare services, both in terms of the efficiency of the service – for example, as indicated by waiting lists and waiting times – and also increasingly in its effectiveness in terms of outcomes.
- 1.42** It is important for the NHS to grasp the extent to which the public wants access to comparative clinical outcome information relating to local NHS facilities. Despite the acknowledged difficulties in ensuring fair comparisons, the arguments for tackling these difficulties and making such information available are irresistible.
- 1.43** People also need easy access to good quality information to enable them to influence local service development, as well as local and national policy.
- 1.44** There is a case, too, for giving the public more systematic access to information to support self-treatment and care, where this is appropriate, so they know when professional help is required, and where and how to obtain it. *NHS Direct* will help meet this need.



An integrated model for information

- 1.45 *Information for Health* introduces a new way of working which recognises how the information derived as a result of the fundamental purpose of the NHS in treating and caring for patients can be subsequently analysed for the benefit of all, and continuously improve treatment and care in the future.

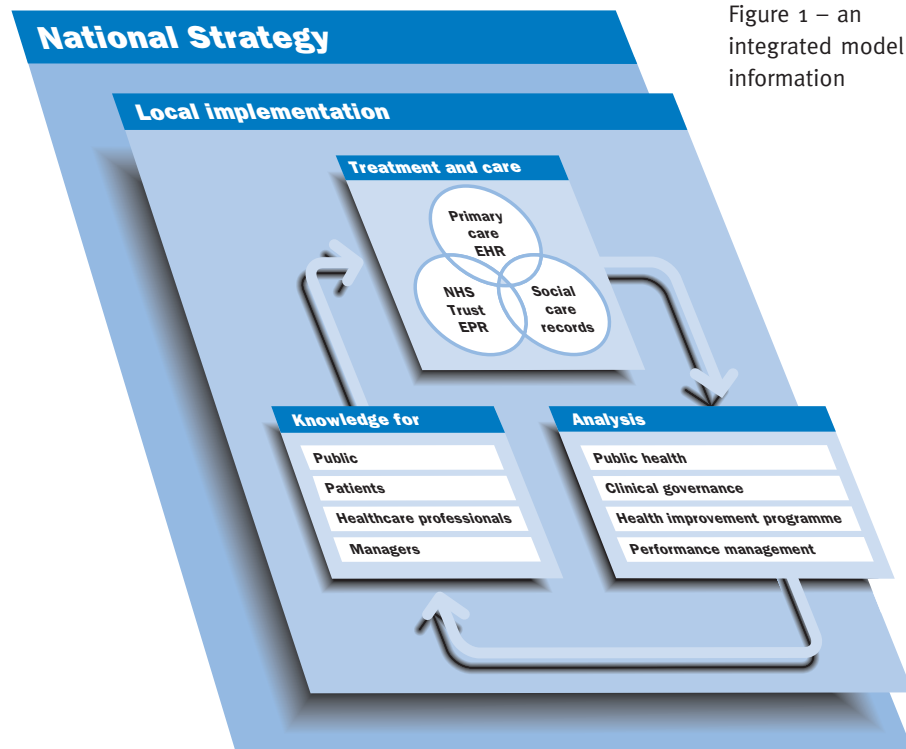


Figure 1 – an integrated model for information

- 1.46 Figure 1 illustrates an integrated model for information which is discussed in more detail later.

The strategic information objectives

- 1.47 Based on the emerging potential of technology, the national policy programme, and the new information needs, the Government has set out the following specific objectives to be delivered through the implementation of this strategy over the period 1998–2005.

- 1.48 The strategic information objectives are:

- to ensure patients can be confident that the NHS professionals caring for them have reliable and rapid access, 24 hours a day, to the relevant personal information necessary to support their care

- to eliminate unnecessary travel and delay for patients by providing remote on-line access to services, specialists and care, wherever practicable
- to provide access for NHS patients to accredited, independent, multimedia background information and advice about their condition
- to provide every NHS professional with on-line access to the latest local guidance and national evidence on treatment, and the information they need to evaluate the effectiveness of their work and to support their professional development
- to ensure the availability of accurate information for managers and planners to support local Health Improvement Programmes and the National Framework for Assessing Performance
- to provide fast, convenient access for the public to accredited multimedia advice on lifestyle and health, and information to support public involvement in, and understanding of, local and national health service policy development.

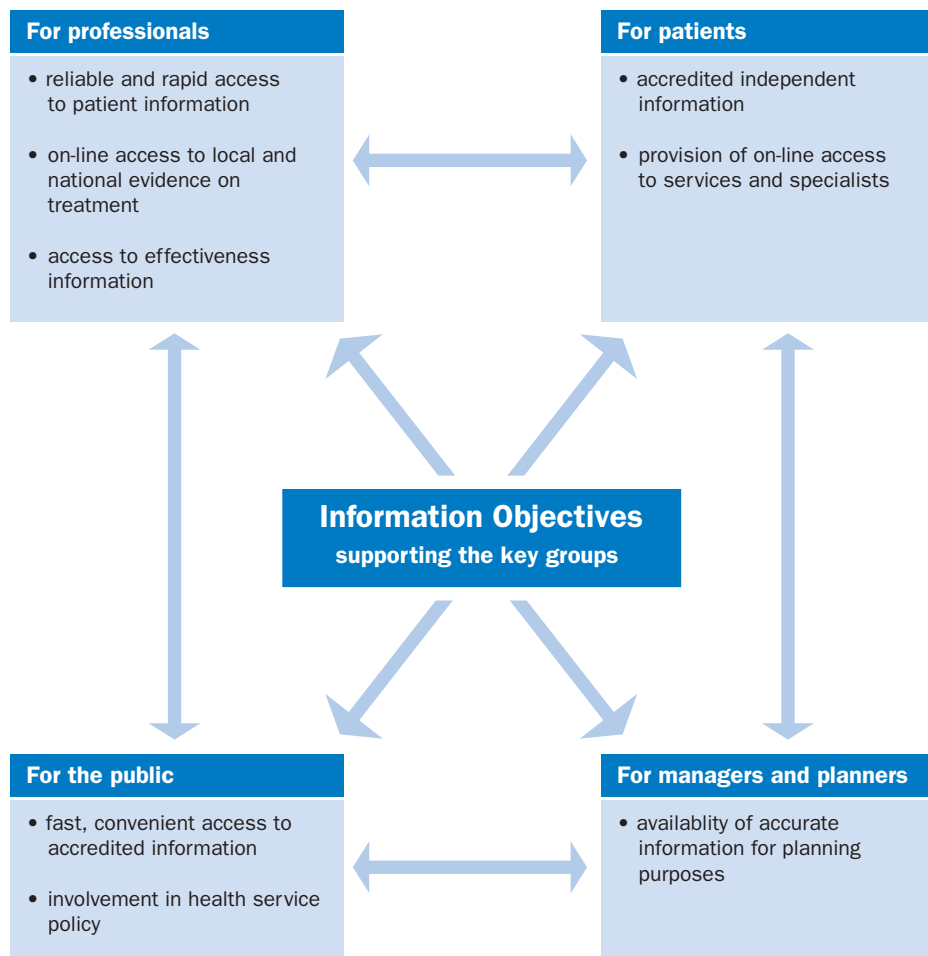


Figure 2 – Information Objectives

Specific targets

'in order to ensure delivery of these strategic information objectives, the Government will require the NHS to achieve specific targets over a period of seven years'

- 1.49** In order to ensure delivery of these strategic information objectives, the Government will require the NHS to achieve specific targets over a period of seven years. These targets are central components of the strategy, and will drive the key tasks to be undertaken. They will be kept under review and developed in the light of changing needs and the capacity of technology to meet them.

The specific targets

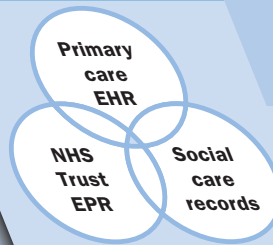
The specific targets are:

- reaching agreement with the professions on the security of electronic systems and networks carrying patient-identifiable clinical information
- developing and implementing a first generation of person-based Electronic Health Records, providing the basis of lifelong core clinical information with electronic transfer of patient records between GPs
- implementing comprehensive integrated clinical systems to support the joint needs of GPs and the extended primary care team, either in GP practices or in wider consortia (eg, Primary Care Groups/Primary Care Trusts)
- ensuring that all acute hospitals have the ability to undertake patient administration, including booking for planned admissions, with an integrated patient index linked to departmental systems, and capable of supporting clinical orders, results reporting, prescribing and multi-professional care pathways
- connecting all computerised GP practices to *NHSnet*
- providing 24 hour emergency care access to relevant information from patient records
- using *NHSnet* for appointment booking, referrals, discharge information, radiology and laboratory requests and results in all parts of the country
- the development and implementation of a clear policy on standards in areas such as information management, data structures and contents, and telecommunications, with the backing and participation of all key stakeholders
- community prescribing with electronic links to GPs and the Prescription Pricing Authority
- routinely considering telemedicine and telecare options in all Health Improvement Programmes
- offering *NHS Direct* services to the whole population
- establishing local Health Informatics Services and producing costed local implementation strategies
- completing essential national infrastructure projects including the networking infrastructure, national applications etc
- opening a National Electronic Library for Health with accredited clinical reference material on *NHSnet* accessible by all NHS organisations
- planning and delivering education and training in informatics for clinicians and managers

National Strategy

Local implementation

Treatment and care

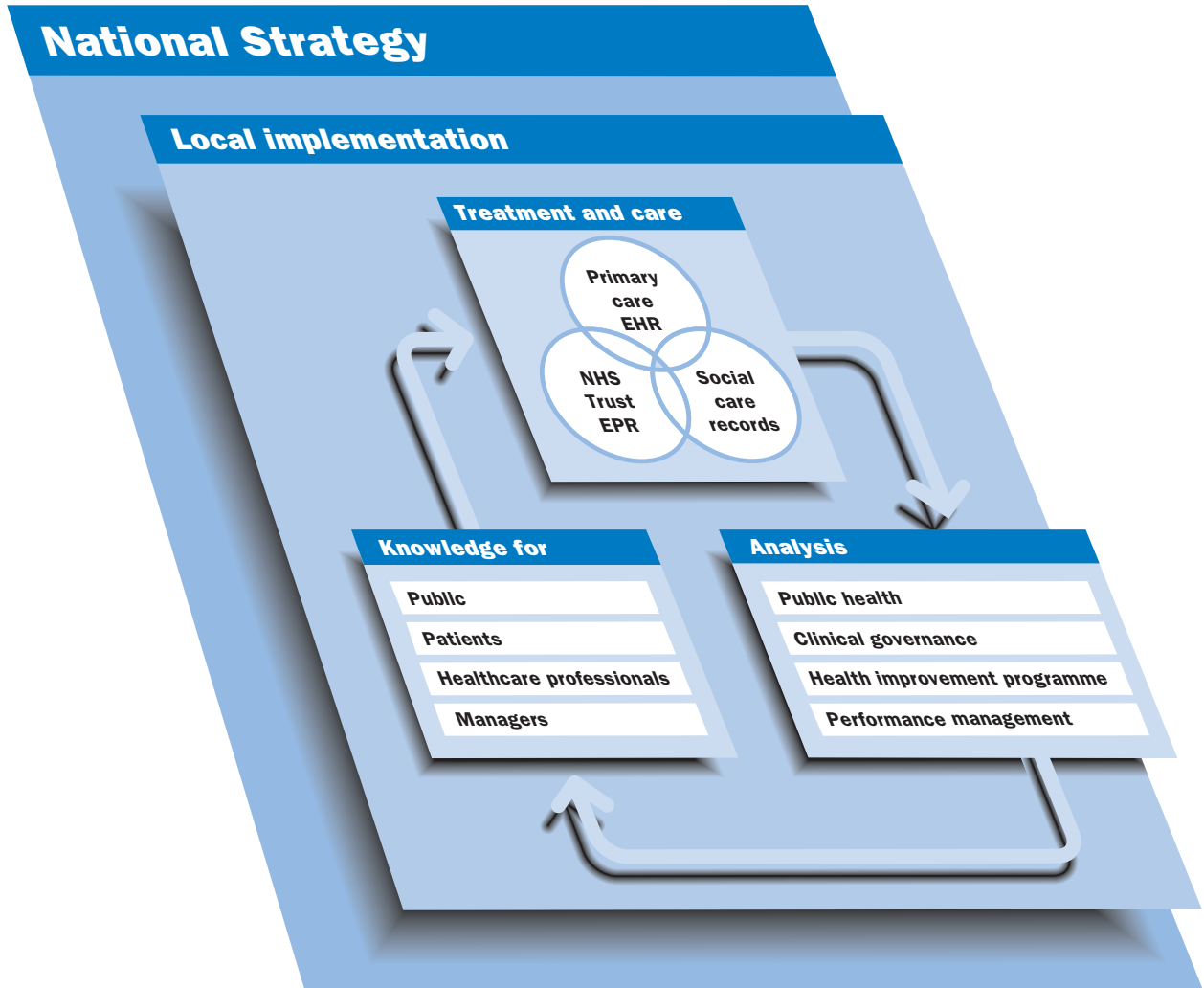


Knowledge for

- Public
- Patients
- Healthcare professionals
- Managers

Analysis

- Public health
- Clinical governance
- Health improvement programme
- Performance management



2

Supporting patient care

'... support the work of all healthcare professionals'

Introduction

- 2.1** This chapter addresses how two of the key strategic objectives introduced in Chapter 1 will support the work of all healthcare professionals involved in the care of patients:
- to ensure that patients can be confident that the NHS professionals caring for them have reliable and rapid access, 24 hours a day, to the relevant personal information necessary to support their care
 - to provide every NHS professional with on-line access to the latest local guidance and national evidence on treatment, and the information they need to evaluate the effectiveness of their work and to support their professional development
- 2.2** Achieving these objectives depends not only on the availability of the latest information technology, but also on changing our ways of working and improving the management of information in general, and patient records in particular.
- 2.3** Most NHS organisations depend on traditional, paper-based, clinical records and will do for some time to come. Intermediate technology such as document imaging offer opportunities to move from paper to electronic records. Other technology can be used to link together islands of information. There is a general need for the NHS to improve its existing record keeping and updated national guidance will be issued later this year. The NHS will need to increase the pace of its take-up of new information technology if the best possible use of information is to deliver maximum service benefit.
- 2.4** Every year, developments in information technology bring rapidly increasing processor power and greater storage capacity at ever reducing cost. Together with the increasing availability of IT systems as part of everyday working life, these developments mean that the Electronic Patient Record is increasingly a possibility. The question is not “whether?”, but “how soon?”
- 2.5** The paragraphs which follow consider:
- the case for the electronic patient and health records
 - what we mean by the terms “electronic patient record” and “electronic health record”
 - how use of integrated records will support integrated care

'... the best possible use of information is to deliver maximum service benefit'

- local development of electronic patient and health records
- some key technology issues facing the NHS.

2.6 Chapter 3 then describes how the national IM&T standards and infrastructure can be exploited to support the requirements.

The case for electronic records

2.7 The arguments for a move towards an electronic record are compelling. Such records are more likely to be legible, accurate, safe, secure, and available when required, and they can be more readily and rapidly retrieved and communicated. They better integrate the latest information about a patient's care, for example from different "departmental" clinical systems in a hospital. In addition, they can be more readily analysed for audit, research and quality assurance purposes.



2.8 The practical benefits of electronic records to patients and staff include:

- *convenience and confidence* – patients will be spared the ritual of repeating their name, address, previous and recent medical history to every NHS person they have to deal with. Patient confidence is increased if they know that all healthcare professionals have access to all relevant parts of their medical history. Patients should also have access to their own records
- *integration of care* – on-line communication between GPs and hospitals will speed access to services and information such as electronic referrals, outpatient bookings, discharge information, and test results. The coordination of multi-professional and multi-agency care for elderly, frail, vulnerable patients and those with challenging behaviour will be substantially improved and seamless care become a reality rather than a cliché
- *improving outcomes* – NHS professionals can make better decisions with up-to-date guidance, complete and legible clinical histories and up-to-date test results at their fingertips, together with relevant alerts and reminders. Patients gain too. For example, repeating an X-ray because the result of a previous one has been lost or cannot be easily retrieved involves the patient in unnecessary exposure to radiation. GPs can have expert and easily accessible desktop guidance on medication options through on-line decision support systems to improve the efficacy of primary care prescribing
- *using evidence* – by integrating Electronic Patient Records with active clinical systems, GPs and other primary healthcare professionals can have desktop access to referral guidelines and advice on first line treatment agreed with local specialists. This will improve the quality and appropriateness of referrals to hospitals. Hospital clinical staff, and especially junior doctors, will have on-line guidance and personal access to latest research findings, treatment and medication options
- *supporting analysis* – analysing the data held within records will create the information needed to meet the requirements for clinical governance and support local planning

'hospital clinical staff, and especially junior doctors, will have on-line guidance and personal access to latest research findings, treatment and medication options'

- *improving efficiency* – the 1995 Audit Commission report *For Your Information* – a study of information management and systems in the acute hospitals – estimated that 25% of doctors’ and nurses’ time was spent collecting data and using information. Electronic patient records will reduce the amount of time spent on this activity, and free more time for direct patient care. Achieving efficiency and productivity benefits through the use of electronic patient records will be important in supporting the national policy objective of reducing waiting lists, which will require increases in elective hospital activity over the period of the strategy.

Defining Electronic Patient Records and Electronic Health Records

- 2.9** The phrases “electronic patient record” and “electronic health record” are terms often used to describe similar concepts. It is important to clearly define how these terms are used in *Information for Health* to avoid confusion.
- 2.10** *Electronic Patient Record* (EPR) describes the record of the periodic care provided mainly by one institution. Typically this will relate to the healthcare provided to a patient by an acute hospital. EPRs may also be held by other healthcare providers, for example, specialist units or mental health NHS Trusts.
- 2.11** The term *Electronic Health Record* (EHR) is used to describe the concept of a longitudinal record of patient’s health and healthcare – from cradle to grave. It combines both the information about patient contacts with primary healthcare as well as subsets of information associated with the outcomes of periodic care held in the EPRs. The relationship between the two is illustrated in Figure 3 below.

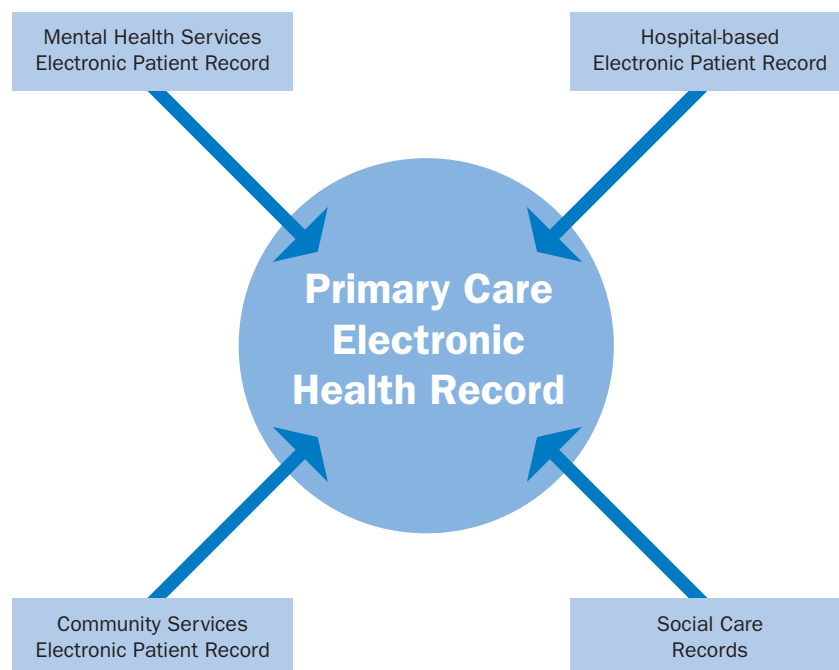


Figure 3 – Creating the Electronic Health Record

- 2.12 When a patient stays in hospital a subset of the information relating to that episode will form part of the EHR.
- 2.13 For certain forms of EPR, for example where long-term care is provided by a mental health NHS Trust, then the summary information should be passed on to the primary care team on a periodic basis to ensure that the EHR reflects the up-to-date status of the patient.
- 2.14 In certain circumstances, and with agreement of the appropriate professional and patient representative bodies, information from records held by social care organisations may also contribute to the EHR.
- 2.15 In theory the EHR is therefore a combination of the bulk of the primary care EPR for a patient together with linking information from other record systems for that patient.

Defining the links

- 2.16 It is essential that healthcare professions agree the nature and content of the component data sets so that a consistent model of EHRs can be constructed. The unique NHS Number will play a crucial role in facilitating the linkage of EPRs, and EHRs. Some work has already taken place in defining the nature of these linkages, for example in the area of pathology results reporting. In other cases, there is move towards standardisation of other elements of the EHR, for example in discharge letters.
- 2.17 The majority of patient contacts are with primary care, and the information contained within the EHR is essential to support primary care teams. It therefore follows that the creation and maintenance of the EHR is best undertaken within the primary care setting.

'... the Electronic Health Record ... will be a lifelong person-based record'

Uses of the EHR

- 2.18 The EHR created in this way allows other developments in the future. One key use will be a lifelong person-based record which follows a patient as they move between GPs. Other opportunities offered by the creation of the EHR are illustrated in Figure 4 opposite.

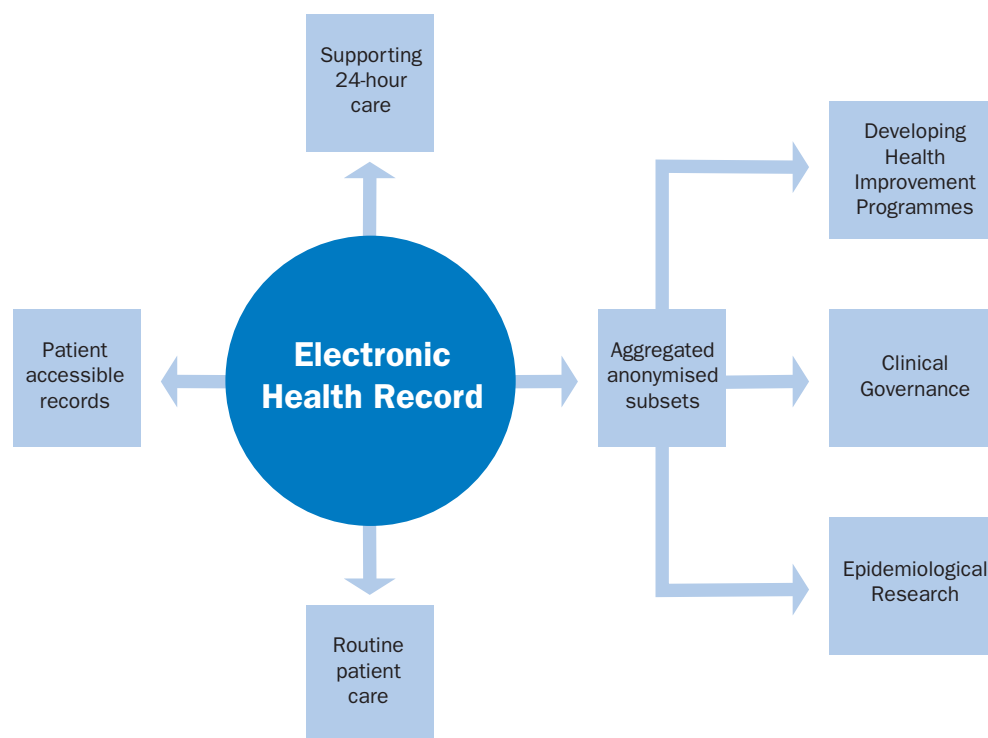


Figure 4 – Using the Electronic Health Record

2.19 The development of a patient-held summary of the Electronic Health Record offers many important opportunities including more secure patient-held information, a more practical basis for record transfer and, in anonymised and aggregated form, a vital aid to national and local health status analysis.

2.20 Currently there is no agreement on either the content, structure or potential use (for patients, clinicians, public health specialists and planners) of individual personal summary health records. The NHS must consider these issues in the context of developing integrated electronic records in primary care.

2.21 The specific direction of any developments will be subject to full professional and patient consultation, but potential uses of the EHR include:

‘... patient-held health records, using smart cards or other technology’

- developing patient-accessible and/or patient-held health records, using smart cards or other technology
- supporting the routine direct care of patients in an integrated fashion
- developing a subset or summary of the EHR for personal health information accessible by appropriately authorised NHS healthcare professionals on a 24 hour basis and providing those professionals with key data to influence the care they provide
- analysing anonymised and aggregated subsets of EHR data for epidemiological research, needs assessment and service planning, and in support of clinical governance.

- 2.22** The particular technology which might be used to create EPRs and EHRs and the physical location of those systems are less important at this stage than agreement over the concept and the way in which they can provide a lifelong record.
- 2.23** It is of particular importance that the Public Health Director should have access to a wide range of information on both the health status and healthcare needs of the local population. The EHR is a key source of information in this respect.

Protecting privacy

- 2.24** There are many benefits associated with an EHR, but there are also real concerns about unauthorised access to electronic records.
- 2.25** Many patients will appreciate the importance of establishing an EHR to ensure that different healthcare professionals in the primary healthcare team (and under controlled circumstances other healthcare professionals) provide the best care based on a full knowledge of the patient's medical history.
- 2.26** In exceptional circumstances some patients may not wish for certain aspects of their medical history to be included in their EHR or communicated to other parts of the NHS. Such requests for privacy must be respected.

'privacy must be respected'

Data quality in EPRs

- 2.27** It is essential to create and maintain accurate, complete, relevant, up-to-date and accessible EPRs. This involves motivation, clinical discussion, education and training, and time for analysis and feedback on a regular basis as well as good clinical systems themselves. Many parts of the NHS have recognised the value to them and the wider NHS in cleaning up and then maintaining high quality clinical records, but others have still to reach the standards of the best.

Using electronic records for integrated care

- 2.28** Achieving integrated care is a key national policy objective. For professionals from different organisations to provide an integrated care service to their individual patients and clients, they require comprehensive and easily accessible person-based records as the basis for communication.

EPRs for each organisation's needs

- 2.29** Many NHS organisations are moving towards effective integrated local EPRs to meet specific local operational needs. In primary care particularly, many GPs are used to accessing an electronic rather than a paper-based patient record.
- 2.30** The central challenge for this information strategy is to ensure these local developments continue in a coordinated fashion to make the common goal of seamless care a reality, and enable every local NHS organisation to reach a minimum level of EPR and exchange information with others.

Seamless care

- 2.31** From its inception the NHS has pursued the goal of seamless care. In most parts of the service, however, effective coordination of services and care has been hampered by the sheer volume of communications about individual patients coupled with the number of organisational and professional boundaries involved.
- 2.32** Where coordination and communication between different parts of the NHS (and with social services) falls down, the consequence is inevitably poorer care for the patients affected. There is also the considerable cost in staff time across the services involved in chasing up information, or resolving problems caused by incomplete information.
- 2.33** A primary objective of the new information strategy is to support improved coordination of care. Developing Electronic Patient Records will facilitate the shift from profession-specific and institutional (or place-related) records to integrated lifelong person-based records and provide the essential source of almost all the information necessary to deliver the strategy objectives fully. Constructing a network of locally-based EPRs over the lifetime of this strategy will create a first generation person-based record for use across the NHS – the “Electronic Health Record” (EHR).
- 2.34** As a minimum, coordination of care must improve across the following organisational boundaries:

- within the full primary care team
- between hospitals and general practice
- between health and social care.

Integrating information for the full primary care team

- 2.35** The inadequacies of information systems to support community health staff have been apparent for many years. The organisational independence of community NHS Trusts, combined with the reality of the extended primary care team, has in the past made the development of operational information systems most difficult. Even without the organisational changes signalled in *The new NHS*, the development of integrated primary/community care systems would have been sensible. *The new NHS* proposals make this change inevitable.

‘A primary objective of the new information strategy is to support improved coordination of care’

- 2.36** To achieve individual lifelong Electronic Health Records we must first develop a fully integrated “core” electronic patient record covering both primary and community care services. In the light of the proposals in *The new NHS* to develop Primary Care Trusts (PCT), the operational information needs for community health staff will be met by the development of primary/community care systems integrated at the practice, or Primary Care Trust level.

Communication between hospitals and general practitioners

‘clinical communication between hospitals and general practitioners has long been a contentious issue’

- 2.37** The quality of clinical communication between hospitals and general practitioners has long been a contentious issue at both ends of the process. These problems present a fundamental challenge to the quality and safety of patient care. GPs consistently complain about the quality and timeliness of test results and information following outpatient or inpatient care. For their part, hospitals are equally critical about the inadequate and incomplete information to support referrals.
- 2.38** In line with the targets in *The new NHS*, specific recommendations are made later to establish electronic communication solutions to these problems.

Mutual access to health and social care information

- 2.39** *Our Healthier Nation* requires delivery of health and healthcare by “the Government, local communities and individuals joining in partnership to improve health”. Work towards this objective involves Health Authorities and NHS Trusts, Local Authorities, businesses, voluntary bodies, and individuals.
- 2.40** *The new NHS* requires closer integration of health and social care at national as well as local level. Although there has been effective joint working in areas such as mental health and child protection, much more can be done.
- 2.41** The development of Health Action Zones (HAZs) will show what joint commissioning and investment plans, cross-agency needs assessment, and linked implementation systems can achieve. Indeed, the development of HAZs, or other Beacon local health services, must explicitly recognise the requirement and potential for supporting integrated care with integrated information.
- 2.42** Effective joint action across the health/social care interface requires that services are planned, commissioned and delivered on the basis of best available information. Successful use of the new flexibilities of pooling budgets, lead commissioning and integration of provision depends on the ability to agree on the planning information. One of the key areas of agreement will be which categories of aggregate information are required to support these activities.

'the confidentiality issues ... will be addressed ... but the care, support and supervision for vulnerable patients/clients must be a primary objective'

2.43 At the individual level, information should be available to ensure the planning, commissioning and coordination of care for people whose needs result in a complex and often changing response. The degree of concern and frustration expressed about the need for mutual access to patient/client records by health and social care professionals suggests that this is an issue which needs to be tackled urgently. The confidentiality issues, which are covered in more detail in the next chapter, are well recognised and will be addressed. However, the effective coordination of care, support and supervision for the chronically sick, mentally ill, people with learning disabilities or otherwise vulnerable patients/clients must be a primary objective.

2.44 National action must be taken to support both levels of information sharing. The information requirements to support integrated care between health and social services need to be determined. This will include agreement on the relevant terms, classifications, groups, headings and protocols to permit accurate communication. In the field of mental health the national roll-out of the minimum data set will be vital. In other areas of community services, the recent critical reappraisal of the 1995 minimum data set offers a helpful direction for development.

24 hour access to clinical records

2.45 A number of the key objectives in this strategy depend on 24 hour availability of current and historical individual clinical records.

2.46 The management of paper-based records can be improved, but only remote electronic access to clinical records provides the speed of access and precision of information needed by NHS clinicians providing care out of hours and in a variety of circumstances:

- in the patient's home or where an emergency occurs
- at out-of-hours Primary Care Treatment Centres
- at hospital A&E Departments
- in support of community-based care
- in providing care to mentally ill people in crisis.

2.47 There are many circumstances where clinicians providing out-of-hours care cannot access any recorded information about the current or previous clinical history of the person being treated. This is not just a problem in the acute sector but is a particularly serious impediment to the care of frail and vulnerable individuals whose quality of life depends on effective, seven day, 24 hour coordination of support services from a variety of clinicians and agencies.



‘in an age when 24 hour banking services provide round-the-clock access it is unacceptable that personal medical histories are only properly available in office hours’

- 2.48** In an age when 24 hour banking services provide round-the-clock access to personal banking records, it is simply unacceptable to continue the situation where personal medical histories are only properly available in office hours.

Local development of Electronic Health Records

- 2.49** This section considers the approach for local organisations to implement EPRs and EHRs across the NHS, both in primary/community care and secondary care. It then addresses how this might become system-wide to provide Electronic Health Records.

Current situation and immediate issues

- 2.50** Progress has been made in many parts of the NHS in adopting new technology to support clinical and management information needs. It has been greatest in primary care where 85% of practices are computerised and many GPs run increasingly sophisticated clinical record systems. A growing number of NHS Trusts have also invested in modern clinical computer systems and the most advanced are at the leading edge internationally.
- 2.51** The rapidly developing application of intranet technology provides important benefits through improved knowledge management and easier local access to intelligence and reference information, whether on administrative or clinical matters. Even without this information strategy, these trends would accelerate and develop.
- 2.52** Despite this progress, most of the NHS remains at the “trailing edge” of information technology and several factors contribute to this:

- many GP systems (and community and mental health systems) currently in use are proprietary systems with hardware and software which is incapable of coping with sophisticated EPR functionality. This, and the lack of a common primary care record structure, hampers the electronic transfer of records from one practice to another as patients change GP, the development of integrated primary/community care systems, and the ultimate development of an EHR
- the funding arrangements for GP information systems (partial reimbursement of the practice investment costs) perpetuate the problems currently encountered, and terms of service for GPs include a contractual commitment to keep paper records
- in many areas there is no active joint planning between hospitals and GPs of the messaging/communications technology needed to support the development of both hospital and primary care EPR
- the vast majority (>75%) of acute hospitals have yet to invest in the clinical information systems necessary to support EPR
- for community and mental health care there is a lack of agreement on what an EPR is and the development of systems has tended to be organisation-orientated and focused on administrative data.

‘... most of the NHS remains at the “trailing edge” of information technology’

'the properly coordinated development of primary care information systems will be a critical outcome of the new information strategy'

Modernising primary care information systems

- 2.53** The properly coordinated development of primary care information systems will be a critical outcome of the new information strategy, for a number of reasons:
- common or integrated systems meet the operational information needs of the full primary care team including the wider group of community health nurses and other community workers
 - the immediate implications of the requirement in *The new NHS* to connect all computerised GPs to *NHSnet* before the end of 1999 for the electronic delivery of hospital test results must be met
 - equally, there is an expectation that a wide range of electronic clinical communications between hospitals and general practice will be developed over the next three to four years
 - many GPs consider the electronic transfer of patient records as patients change their GP is an urgent priority, given the degradation of record quality that occurs when, as is currently necessary, electronic records are converted to paper form for transfer to the new GP
 - electronic links are needed between GP practices, community pharmacies and the Prescription Pricing Authority to improve the service to patients and the flow of information to the NHS about prescribing practice and effectiveness. This would also offer considerable scope for financial economies from more efficient data processing and from the elimination of prescription fraud. The best means of achieving these links will need to be explored with the professions and other interests.
- 2.54** The overarching requirement, however, for developing systems in primary care will be the pivotal role these systems will have in creating and maintaining the Electronic Health Record. The Electronic Health Record will inevitably be built and retained in primary care.
- 2.55** The creation of Primary Care Groups in *The new NHS* has raised some immediate questions about the appropriate level (practice *versus* PCG) for the development of operational primary care information systems. This could be a major distraction. Unless all GPs in a particular PCG area agree on a single integrated system, integrated operational systems support should be provided to the wider primary care team at the practice level for a number of reasons:
- PCGs need to invest time in the early stages to develop the structures, processes, relationships and the culture of partnership necessary to exploit any improved flow of information
 - the GP practice is the basic building block of the NHS and is the clinical centre of gravity for primary care



- individual patients believe the quality of their own GP's clinical communications with the community and mental health teams and the local hospital is a much more urgent priority than the acquisition of major systems to support the managerial and commissioning agendas of PCGs
- essential work to agree the information standards that will underpin the next generation of primary care clinical systems (common record structures, standard headings etc) is in the very early stages
- the information needs of PCGs need to be carefully defined and agreed before PCG-based systems are implemented. The extent to which these needs can be met from existing information flows needs also to be carefully considered and will be the subject of separate specific guidance.

'a specific national programme is required to coordinate the development of a new generation of clinical systems in primary care'

- 2.56** A specific national programme is required to coordinate the development of a new generation of clinical systems in primary care which address the following priority issues:
- moving GPs and community NHS Trusts towards clinical systems that support open standards and common structures for core elements of record systems
 - agreeing the national information and communication standards within both primary and secondary care to underpin these developments
 - exploring alternative mechanisms for funding GP systems and defining the scope for public/private investment partnerships
 - exploring and agreeing the protocols for determining access and control of records, including ownership, authorship, and provenance (both within primary care, and outside it), including the need for effective controls in an electronic environment (eg, audit trails, electronic signatures)
 - providing access by the full primary care team to systems which support integrated clinical records
 - addressing the education and cultural change issues of team working supported by integrated clinical systems
 - implementing a wide range of electronic clinical communications with hospitals
 - resolving the problem of access to records for out-of-hours services
 - transferring records electronically between GPs
 - electronic community prescribing
 - coordinating the IM&T requirements of dentists, opticians and pharmacists with the rest of the primary care IM&T agenda.

Actions

- The commitment in *The new NHS* to modernise GP information systems requires a specific national programme to coordinate all aspects of the development of primary care information systems.

'connecting all computerised GP practices to the NHSnet, as required by The new NHS, so that they are able to receive at least one type of test result from local hospitals by the end of 1999'

'... the NHSnet to link all computerised GP practices to local community pharmacies'

- 2.57** Further actions to deliver the changes in primary care will include:

Actions

- New arrangements for funding GP IT investments to deliver the commitment to modernise GP hardware over the period of this strategy and coordinate value-for-money solutions will be explored.
- Removing the contractual requirement for GPs to retain paper records from the Terms of Service.
- Connecting all computerised GP practices to the *NHSnet*, as required by *The new NHS*, so that they are able to receive at least one type of test result from local hospitals by the end of 1999.
- A project will be established to explore ways of using the *NHSnet* to link all computerised GP practices to local community pharmacies by the end of 2001. Both these groups would link to the Prescription Pricing Authority.

Modernising hospital systems

- 2.58** A sizeable minority of acute hospitals have now completed the procurement process to implement operational clinical systems to various levels of sophistication. The current business case process for hospital IT systems is extremely rigorous and the 40 or so approved procurements in recent years represent a valuable body of experience which should benefit those who follow. These hospitals have begun the task of developing integrated Electronic Patient Records because they know that this has the potential over time to yield major benefits to both patients and clinicians.
- 2.59** These projects provide a growing body of evidence across the NHS about the considerable clinical, operational and financial benefits to be delivered over time from computerised and integrated clinical records. There are few instant “financial” benefits because of the complexity and difficulty of the change process associated with the introduction of new technology. It is, however, apparent from the national EPR pilot sites that the more mature and competent the organisation becomes in exploiting information technology, the more rapidly significant clinical, operational and economic benefits will flow.
- 2.60** There is strong evidence that a substantial element of NHS Trust IT procurements in the range of £3m–10m whole life costs can be funded over the life of the project taking account of the expenditure on existing systems, together with efficiency gains. Health Authorities must appreciate the long-term gains from clinical support systems, and take account of how the medium to long-term revenue savings that can support running costs of projects.

- 2.61** In the past there have been difficulties in resourcing such changes. This Government has made its commitment to modernising the NHS and to supporting that commitment with resources. There is no easy option for resourcing major systems procurements, but there are opportunities for better use of resources, for example:
- the level of existing spend on often under-utilised and uneconomic small-scale systems (some hospitals without EPR already spend as much annually on IT as those with reasonable EPR capability)
 - the commitment and support of Health Authorities to community-wide local implementation strategies (discussed in more detail later in this strategy) can ensure a much more efficient and effective use of collective resources by the NHS in that area
 - the internal economies that can be delivered by integrated clinical systems over time as demonstrated by many of the business cases for already completed projects.
- 2.62** The NHS simply cannot sustain the present disparity in the level of information systems support to clinicians and must set a minimum level of development across the acute sector. An overview and summary explanation of the different levels of development is at Figure 5.
- 2.63** Apart from internal EPR requirements, the acute sector also has a key part to play in the development of the EHR in the primary care sector by developing and implementing agreed national communication standards for the electronic exchange of items of patient-specific information between primary and secondary care.
- 2.64** *The new NHS* has generated a national project to connect all computerised GP practices to *NHSnet* by December 1999 and facilitate the introduction of standard, structured electronic clinical messages between hospitals and GPs. All computerised practices will be able to receive at least one type of test result over the network by the end of 1999. This presents a particular challenge to the acute sector which in the main has not given sufficient priority to this element of their local IM&T strategies.

'the NHS simply cannot sustain the present disparity in the level of information systems support to clinicians'

Level 6	<p>Advanced multi-media and telematics</p> <p>Level 5 plus telemedicine, other multi-media applications (eg, picture archiving and communications systems)</p>
Level 5	<p>Specialty specific support</p> <p>Level 4 plus special clinical modules, document imaging</p>
Level 4	<p>Clinical knowledge and decision support</p> <p>Level 3 plus electronic access to knowledge bases, embedded guidelines, rules, electronic alerts, expert system support</p>
Level 3	<p>Clinical activity support</p> <p>Level 2 plus electronic clinical orders, results reporting, prescribing, multi-professional care pathways</p>
Level 2	<p>Integrated clinical diagnosis and treatment support</p> <p>Level 1 plus integrated master patient index, departmental systems</p>
Level 1	<p>Clinical administrative data</p> <p>Patient administration and independent departmental systems</p>

Figure 5 – EPR levels

Delivering access to clinical records

2.65 A key objective of this information strategy is to ensure that relevant information contained within Electronic Health Records is available to authorised clinicians in carefully prescribed circumstances on a 24 hour basis. This requires coordinated discussion with the professional community at national level and will be the subject of a national project to assess the best way forward.

‘agreement is required between the professions and with the public on what level of out-of-hours access to information is needed’

2.66 Resolving the issue of professional out-of-hours access to Electronic Patient Records is not simply a matter of deciding which technical solution to adopt. Agreement is required between the professions and with the public on what level of out-of-hours access to information properly balances benefits in the quality of care with the technical, ethical and confidentiality difficulties that arise. Different options and different levels of access may arise for out-of-hours access to facilitate local healthcare compared with occasional emergency access for professionals outside the local health community.

2.67 It is possible that out-of-hours access by authorised local NHS organisations would be to the full patient record, and occasional authorised remote access would be to a subset of critical data. If a summary record is created to support remote (or local) emergency care then the content must be agreed as a national standard amongst the clinical professions and likewise for the protocols for authorising access to it.

- 2.68** One option may involve the development of patient-held records, possibly through the use of smart cards. While these are used extensively in other countries such as France and Germany, there are some specific organisational drivers in those countries – such as the need to support billing – which are not present in the UK. A workable solution must cater for the possibility that patients may be unconscious or have lost or left behind their records at the time they require care. Regardless of the technology used, any approach must ensure that the timing and provision of care does not completely rely on patients having such records with them.
- 2.69** There are many technical questions including how to reconcile local solutions with the need for remote access on a national basis, and the fundamental issue of preserving security and confidentiality of that information.

Beacon EHR sites

- 2.70** A number of beacon sites will be set up to explore the issues associated with the creation of EHRs. They will act as pathfinders to explore the development and implementation of EHRs and in particular the different approaches that could be adopted to achieve the EHR in practice. In line with the recommendations from the Public Accounts Committee the work of these sites will be continuously evaluated and the results disseminated quickly to others following the same path.

Actions

- Over the period of this strategy all acute hospital sites will develop their information systems at least to the level necessary to support the new NHS target for clinical messaging with primary care, the wider strategic aims of this strategy, and internal EPR development. They should be able to support clinical activity such as placing clinical orders, results reporting, prescribing, and multi-professional care pathways (ie, to at least the Level 3 functionality as shown in Figure 5).
- By the end of 2002 all GP practices will be able to book some hospital appointments electronically.
- By the end of 2002 hospitals and all GPs will be routinely exchanging structured electronic messages for referrals, discharge summaries, laboratory & radiology requests/results.
- A specific national project will be established to advise on the circumstances for allowing remote out-of-hours access to Electronic Patient Records and the most practical options for securing this access.
- A number of sites will be identified as Beacon EHR sites and will have developed plans by 2000 with a view to implementation by 2002.

Technology for the Electronic Health Record

Developing and maintaining the Electronic Health Record

'a key objective of this strategy is the creation of an electronic health record within primary care that is eventually universally accessible and which records the healthcare of individuals throughout their life'

- 2.71** A key objective of this strategy is the creation of an electronic health record within primary care that is eventually universally accessible and which records the healthcare of individuals throughout their life. The approach adopted will need to take account of the existing investment and track record in use of the messaging, and the overall global trends towards developing new technology based on the Internet.

Sharing Electronic Health Record data

- 2.72** Before reaching detailed decisions on the technological approaches, there needs to be a debate on the content, structure and use of EHRs with the health professional and managerial community, involving the views of patients, carers and the public whom they serve. However these issues are resolved, there will inevitably be a need to share patient data in a reliable, consistent and automated manner between organisations, through their corresponding systems and subject to appropriate security and confidentiality considerations.

Integrating data at source

- 2.73** One technological approach involves sending data from one system to another which is then subsequently automatically integrated into the database of the receiving system.
- 2.74** Take an example of a patient seen by a hospital radiology department. The consultant produces a report, which is sent electronically by means of a message to the GP. On receipt of that message, the data contained within the message is automatically integrated within the database of the GP's system. When the GP wants to use it, he or she will be able to access it from his or her own system database.
- 2.75** This approach can be described as a messaging – or “data-push” – model where data is sent in advance of a requirement by the user. It is the approach that has been adopted and successfully deployed in a number of areas in the NHS over recent years.

Integration or networking the resultant information

- 2.76** An alternative approach is one where data is retained and stored wherever it is generated, possibly in different formats and structures, but can be assembled and transferred together at the time of use through the use of networks.

- 2.77** Using the example above, the radiology data remains on the hospital system. As and when the GP needs to use that data, the GP's terminal must be capable of identifying the relevant part of the patient's record on the remote hospital system. The hospital database is then queried and the data returned back to the GP to be presented alongside other local data from the GP's own system in an integrated fashion.
- 2.78** This approach might be described as a browsing – or “data-pull” – model where data is accessed only at the time it is required.

Hybrid

- 2.79** These approaches are not necessarily exclusive. There may be a hybrid model where the majority of data is retained at the point at which it is generated – the hospital system in the example above – but messages containing a subset of that data are sent to the other system – the GP system. This subset may contain key items, eg, a hospital discharge summary, to be integrated within the database of the GP system. Access to this locally-held subset will be fast but there will also be a facility for the GP to retrieve the more detailed data from the hospital if required.

Role of the network

- 2.80** In any model the provision of robust, reliable high-speed communications networks will be important, and especially so for the data-pull approach where sub-second response times are required.

Developing standards

- 2.81** The most suitable approach will depend on having mature and emerging technological standards, which can establish the data infrastructure to support EHR. For example, web browsers and other internet technology may help to integrate distributed data sources and provide more consistent appearance to the user. Adopting and implementing comprehensive messaging standards will make the use of data-push more routine. Object orientated technology offers the prospect to develop separate but very closely linked systems.
- 2.82** Rapid developments in internet technology are already being used within NHS organisations as a cost-effective way to streamline business processes through local intranets. In other fields – including healthcare environments elsewhere in the world – emerging internet-based applications can serve as common inter-organisational databases as well as meeting local functionality requirements. The use of these and other leading edge appropriate technology will need to be kept under review.

‘in any model the provision of robust, reliable high-speed communications networks will be important’

Proposed approach

2.83 There are a number of factors that influence the choice of approach to be adopted:

- the over-riding need to preserve the confidentiality of patient information and the need to ensure that the technical measures used to protect patient privacy are acceptable to the professions
- the extent to which new technological developments such as the browser-based software are taken up throughout the NHS
- the need to have a critical mass of NHS organisations prepared to adopt a particular model for implementation
- the variety of different starting points within local NHS organisations, the availability of the necessary infrastructure and the track record and experience levels.

‘... the quickest route to a first generation electronic health record across the NHS will be through a national approach to clinical messaging between hospital and GPs’

2.84 Taking into account these factors, the quickest route to a first generation electronic health record across the NHS will be through a national approach to clinical messaging between hospital and GPs, and to record transfer between GPs, which builds on the “data-push” model. This will require the implementation of nationally agreed structured clinical messages for key clinical communications between primary care and hospitals (ie, those forming part of the core EHR which will follow a person if they change GP). Equally, it will require agreement that GP-to-GP record transfer will involve a network transfer of all or part of the record. This approach will meet the relevant targets for GP–hospital communications in *The new NHS*.

2.85 Such an approach does not rule out the local development of data-pull solutions based on distributed databases using browsers and intranets. Such solutions may be developed for use within an organisation and used for access to information in electronic records which will not be routinely transferred between NHS sites, subject – as always – to appropriate arrangements for security.

2.86 The target in *The new NHS* to connect GP practices to *NHSnet* is, of course, a fundamentally important prerequisite for any developments.

Supplier partnerships

‘an effective partnership between the NHS and the supplier community is needed to ensure a practical approach to the use of technology and standards’

2.87 Implementing any approach depends on robust products and services being available from reputable suppliers. An effective partnership between the NHS and the supplier community is needed to ensure a practical approach to the use of technology and standards. It must exploit what is currently available and practical without excluding the adoption of newer technology as it becomes affordable and reliable.

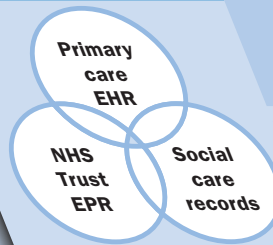
Actions

- At a national level the NHS will build on the existing data-push approach using national standard structured clinical messages for exchanging electronic information to develop Electronic Health Records.
- At a local level the NHS is encouraged to explore the use of data-pull approaches to access both local records and other information sources.

National Strategy

Local implementation

Treatment and care

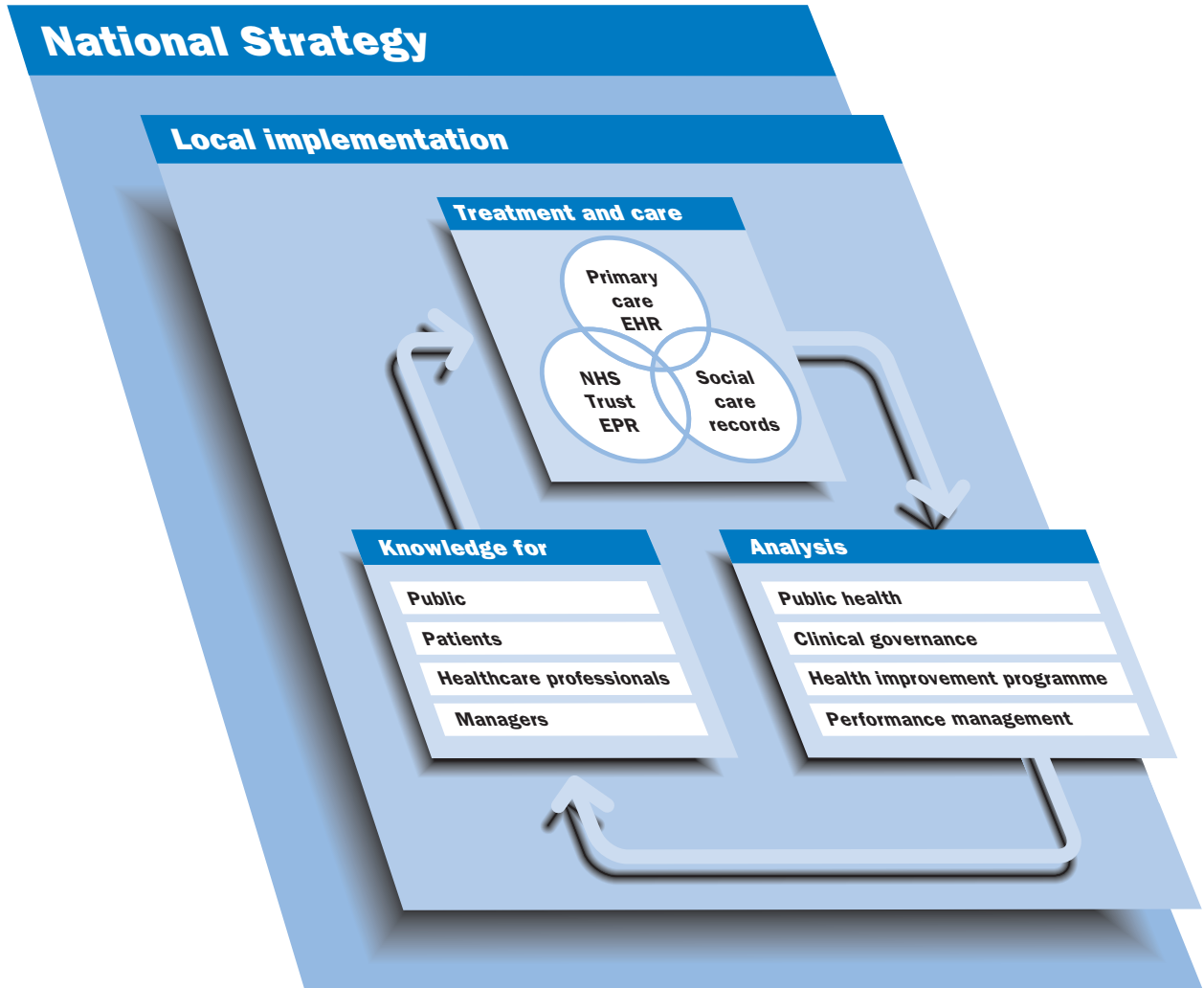


Knowledge for

- Public
- Patients
- Healthcare professionals
- Managers

Analysis

- Public health
- Clinical governance
- Health improvement programme
- Performance management



3

Supporting integrated care through NHS-wide standards and infrastructure

Introduction

3.1 The previous chapter identified the benefits of EPRs and EHRs to clinicians and the local recommendations for action. This chapter identifies the national IM&T infrastructure that must be in place to support the objectives for integrated patient care:

- to ensure that patients can be confident that the NHS professionals caring for them have reliable and rapid access, 24 hours a day, to the relevant personal information necessary to support their care
- to provide every NHS professional with on-line access to the latest local guidance and national evidence on treatment, and the information they need to evaluate the effectiveness of their work and to support their professional development.

3.2 The chapter summarises the main achievements and outstanding issues in the current development of the NHS IM&T infrastructure and then addresses the following strands:

- developing clinical information standards
- addressing privacy, security and confidentiality
- improving mutual access to health and social care information
- improving use of *NHSnet*
- creating a National Electronic Library for Health.

National infrastructure developments

3.3 Substantial attention and resources have gone into delivering national NHS-wide information standards, and a technology and applications infrastructure from the previous IM&T strategy. Key achievements include:

- the development and implementation of the new NHS Number
- development of Clinical Terms Version 3 (Read Codes)
- implementation of NHS-wide networking and standards
- introduction of the NHS-wide Clearing Service
- agreements with the clinical community on security and confidentiality of patient data and agreement on message standards in a number of administrative and clinical areas.

3.4 New infrastructure developments will include:

- the operation of the NHS Strategic Tracing Service
- updated guidance on record keeping
- the National Electronic Library for Health.

3.5 This infrastructure provides the foundation for integrating patient information across the NHS.

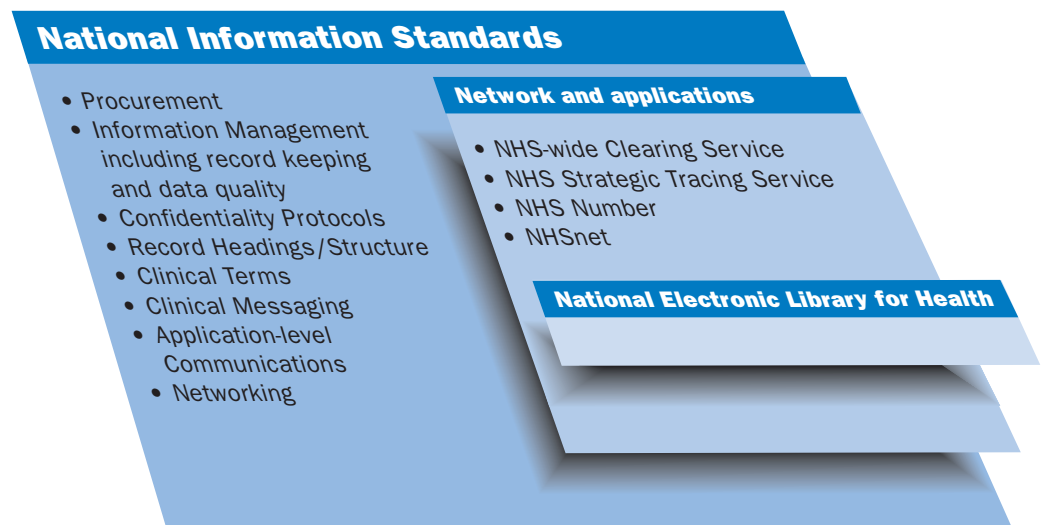


Figure 6 – The national IM&T Infrastructure

Current issues and problems

3.6 Further development of the NHS IM&T infrastructure is required to address a number of difficulties:

- the lack of common record structures and terminology (with some notable exceptions) being used within and between primary and secondary care
- the absence of comprehensive nationally agreed standards and protocols for the capture and communication of clinical information
- professional and public concerns over the security of information in EPRs and EHRs and the transmission of identified personal records over electronic networks
- the uncoordinated approach to developing condition-specific clinical minimum data sets without ensuring there is a common core
- practical difficulties in providing mutual access to patient/client records between health and social care
- the lack of a universal coded drug dictionary

- uncertainty surrounding mandatory use of Clinical Terms Version 3 (Read Codes)
- confusion over the development of operational information systems to support community health workers.

3.7 Much of the outstanding work centres around continued development and application of appropriate standards. Such work is most sensibly done on a national basis, but must engage the relevant stakeholders from the clinical, management and health informatics professions, and the supplier community. Once standards are agreed, then they will be applied through requirements in procurement. This will build on existing methods of standards application through processes such as STEP (Standards Enforcement in Procurement) and RFA (Requirements for Accreditation).

Developing clinical information standards

'... we need a more organised and disciplined approach to agreeing national clinical data standards'

3.8 Across the NHS, within NHS Executive policy branches, within IMG, and in various academic units, a considerable amount of uncoordinated effort is currently being put into the development of various aspects of clinical data standards. Before we can establish shared person-based electronic patient records we need a more organised and disciplined approach to agreeing national clinical data standards.



- 3.9** It is not possible or necessary to undertake the development of all national clinical data standards centrally. An organisational framework is needed to create the national context for the work and coordinate existing work or commission new work as required.
- 3.10** This would also provide a suitable mechanism for developing and agreeing national clinical information (and information exchange) standards both within and between primary and secondary care.
- 3.11** This national framework will be the Clinical Information Management Programme (CIMP), led by a clinically qualified National Director. It will be directed by a strong professional advisory group representing the key clinical stakeholders, with a remit to prioritise work and sign off agreed clinical data standards as they are developed. The professions will be consulted on the establishment and membership of a Clinical Data Standards Board with a remit to mandate professionally developed and agreed clinical data standards throughout the NHS.

- 3.12** The Clinical Information Management Programme will be the sole organisation at national level for directing and coordinating work on developing national clinical data standards and clinical data management tools. The programme will “inherit” existing work programmes covering:
- clinical headings and definitions
 - clinical terms and coding
 - classification
 - casemix development
 - clinical messaging standards
 - condition-specific clinical data sets (eg, for the cancer information strategy)
 - standard clinical record structures.
- 3.13** The core staff resource for the Clinical Information Management Programme will be created from the merger of the NHS Centre for Coding and Classification, the National Casemix Office and any other relevant resources in IMG.
- 3.14** Staff working on the programme will bring together clinical and IM&T skills. Experience of European and international standards emerging in this area will also be important. The unit will make arrangements to obtain the informed views of patients, carers and the public on what clinical information should be collected and the standards to be set. The focus must be on delivering standards that support effective national clinical data analysis as well as clinical care.
- 3.15** The emphasis is rightly on establishing clinical data standards, as part of the total data standards effort, but the development, maintenance and implementation of national data standards in all areas will also be addressed.

‘... the views of patients, carers and the public will be sought on what clinical information should be collected and the standards to be set’

Actions

- A national Clinical Information Management Programme will be established to coordinate the development of national clinical information standards.
- A national Clinical Data Standards Board will be set up to agree and mandate national clinical data standards.

A standard clinical vocabulary

- 3.16** The successful development of the EPR and EHR requires a common coded clinical vocabulary to facilitate reliable and accurate electronic communication of clinical information, with nationally and internationally consistent activity analysis.

‘the clinical community remains committed to the Clinical Terms project and is keen to see the existing work programme completed and an immediate roll out to the NHS’

3.17 The NHS has invested considerable time and effort in the development of the Read Codes and the subsequent Clinical Terms project to produce Version 3, which extends the vocabulary from a medical to a clinical thesaurus. Clinical Terms Version 3 (Read Codes) is currently being assessed against “fit for purpose” criteria by extensive testing in pilot sites and is now close to being sufficiently robust to adopt nationally.

3.18 The clinical community remains committed to the Clinical Terms project and is keen to see the existing work programme completed and an immediate roll out to the NHS.

3.19 The commercial arrangements for licensing and distribution of the codes are a major disincentive to take-up at the local level. The present licensing agreement expires in March 1999 and new arrangements for distribution and support for the codes will be specifically designed to keep costs for the NHS as low as possible.

SNOMED

A set of terms for use in medical records, developed in the USA. (see *Glossary*).

3.20 The development of clinical vocabularies has an important international dimension. Alongside the importance of using Clinical Terms Version 3 (Read Codes) nationally as soon as possible to support EPR and EHR development, it is necessary to plan for the future. Active discussions are underway between the developers of the Clinical Terms Version 3 (Read Codes) and the SNOMED RT product to provide users of both products in the future the strengths of each through collaboration and the development of a strong English language vocabulary.

A UK standard clinical products reference source

3.21 There is a lack of standardisation in the UK in describing medicines, appliances and medical devices, in how such descriptions are organised, and in linking knowledge required for decision support to these descriptions.

3.22 To support the clinical process we need electronic communication of drug information for individual patient care and secondary/other purposes. To achieve this a common electronic register of clinical products is required to support:

- Electronic Healthcare Records
- clinical Electronic Data Interchange
- decision support
- stock control
- costing
- adverse drug reaction reporting
- performance management
- different care delivery systems.

Actions

- Over the period covered by this strategy, and dependent on the outcome of the independent review currently underway into the use of the Read Codes, the NHS will be mandated to incorporate the use of Clinical Terms into operational clinical systems.
- Licensing arrangements for Clinical Terms (Read Codes) will be changed for NHS users from April 1999 and for non-NHS users from October 1999.
- Taking a longer-term view the current exploratory discussions about the possible future convergence of the Clinical Terms Version 3 (Read Codes) thesaurus with other international English language thesauri (eg, SNOMED) will be pursued.
- Work will begin on a national project to develop the UK Standard Clinical Products Reference Source, bringing together all existing initiatives associated with the coding of drugs etc.

Addressing privacy, security and confidentiality

- 3.23** All NHS professionals will have experienced situations where problems in information or communication have inconvenienced patients. In the worst cases poor communication and information deficiencies during the treatment process have had more serious consequences.
- 3.24** The proposals in this strategy are based on the premise that improving the capture, use and communication of information related to patient care will produce significant improvement in the effectiveness and outcome of treatment. The opportunity for improvement is not confined to better communication within the NHS but extends to the sharing of information between NHS and social care professionals.
- 3.25** The use of computers and electronic network technology to remedy the present deficiencies is both inevitable and urgent but requires careful attention to issues of confidentiality and security of information. In an electronic environment, implementation of the policies and procedures necessary to protect the privacy of patients must become an overriding priority. In particular the NHS must have effective processes in place to:
- ensure patients are made aware of the intention to share information with other members of the clinical team and that any specific wishes to the contrary will be respected
 - agree and strictly observe protocols that ensure identifiable personal information contained within electronic records is communicated to or accessed by other NHS professionals on a strictly 'need to know' basis and is restricted to the specific information essential to their own contribution to the care of patients

- agree and implement authentication and access security controls to prevent unauthorised access and ensure authorised access is based on the “need to know” principle
- ensure strict observance of legislative requirements with regards to the confidentiality and security of personal health information.

3.26 In recent times the security of personal health information stored and transmitted electronically has been a major issue of concern between the NHS Executive and the clinical professions (and the British Medical Association (BMA) in particular). These legitimate professional concerns have affected progress both nationally and locally in exploiting new information and communications technology.

3.27 Under the auspices of tripartite meetings between the Chief Medical Officer (CMO), the BMA and information policy officials over the last two years considerable progress has been made, and many of these concerns resolved. This progress must continue to ensure that the benefits of electronic patient records can be realised for professionals and patients.

3.28 There is broad agreement now on balancing the potential risks to individuals arising from information security concerns with the benefits of rapid access to relevant information about their care by patients and by clinicians.

3.29 The nature of such risks might include:

- confidentiality breaches within NHS and partner organisations
- confidentiality breaches on the transfer of clinical information between NHS organisations
- confidentiality breaches relating to non clinical uses
- corruption of data or corruption of messages
- failure of back up procedures.

The Caldicott report

3.30 Dame Fiona Caldicott’s report on the review of patient identifiable information, published last year, made a series of recommendations aimed at improving the way the NHS handles information. Rigorous implementation of the report's recommendations will go a long way to achieving this by:

- preventing the unnecessary identification of individual patients in non-clinical information flows
- greatly improving awareness of the issues, safeguards and procedures necessary to protect patient confidentiality

The multi-professional Caldicott Implementation Steering Group is putting in place a programme of action to take forward the report’s recommendations.

'... a senior clinical "Guardian" will be responsible for ensuring that the local use of patient identifiable information is effectively governed by agreed protocols on patient confidentiality'

- 3.31** A key recommendation is the appointment in all NHS organisations of a senior clinical "Guardian" who will be responsible for ensuring that the local use of patient identifiable information is effectively governed by appropriate national and locally agreed protocols on patient confidentiality. Consultation on the role of the Guardian has recently finished and final guidance will be issued later in the year.
- 3.32** The Caldicott report strongly supports the use of the new NHS Number as the main patient identifier in communications relating to individual patients and as the only identifier to be used wherever it is practical and safe to do so. The removal of patient names and addresses from communications will provide simple but effective protection for patient privacy. To support increased reliance upon the new NHS Number, it will be important to establish the national NHS Number Strategic Tracing Service, with agreed access security protocols, as soon as possible.
- 3.33** Another key recommendation recognises the need to begin discussion and reach agreement on the use of effective privacy enhancing technologies, to improve the security of personal health information held in computer databases and transmitted over electronic networks. An NHS Security and Encryption Programme has also been in existence for over 12 months, and provides a platform for the professions and NHS Executive officials to initiate and review pilot projects testing privacy enhancing technologies, communication standards and access controls.
- 3.34** All further development in the area of security and confidentiality will need to be carried out within the provisions of the latest data protection legislation as laid down in the Data Protection Act 1998. This is the relevant enabling legislation to implement the EU Data Protection Directive (95/46/EC) and which has effect in the UK from 24 October 1998.
- 3.35** The new information strategy will encourage the NHS to make increasing use of the electronic capture and communication of information. It will be important that the NHS develops and maintains an appropriate balance between protecting patient privacy and realising the benefits to patients of providing professionals with ready access to health records. One approach which has been advocated by many of those commenting on the Caldicott Guardian consultation paper, and which has many attractions, is the establishment of a national body to advise on patient confidentiality issues.
- 3.36** For many patients/clients NHS professionals work with social care professionals in delivering an integrated service, with a need to share information about those patients/clients. Present arrangements are based on local agreements, but there is an urgent need for a clear national policy around the sharing of personal data between NHS and social care professionals when it is clearly in the interest of the individual.

'... a national body to advise on patient confidentiality issues'

Actions

- The professions and other interests will be consulted on both the principle of a national body to advise on patient confidentiality issues and on its potential remit.
- The proposals in the Caldicott report to appoint local “Guardians” of patient privacy will be implemented by April 1999.
- Implementation of the Caldicott recommendations concerning use of the NHS number as the main identifier in communications relating to individual patients and the elimination of other personal identifiers wherever possible from non clinical flows will be pursued as a particularly high priority.
- Full and effective implementation of all other agreed recommendations in the Caldicott Report in cooperation with the professions and other interested parties
- Protocols to ensure use of the NHS Number Strategic Tracing Service is strictly based on authorised access for authorised purposes will be agreed as a matter of urgency.
- Proposals to improve the technical security of electronically stored and communicated personal health information will be developed in consultation with professions and other relevant interests.
- Joint NHS/ Social care policy guidance will be urgently agreed with the relevant interests on the principles and practical issues relating to client/ patient record sharing.

The NHS network

‘the NHSnet has the potential to deliver the enormous benefits of information technology to all parts of the NHS’

- 3-37** The potential of the NHS network (*NHSnet*) to take the NHS forward into the new era of information technology has been recognised by the Government and the development of the NHS “Information Superhighway” is a major deliverable in *The new NHS*. The *NHSnet* has the potential to deliver the enormous benefits of information technology to all parts of the NHS for the wide variety of purposes discussed elsewhere in this document.
- 3-38** Alongside the inevitable and rapid development of the public Internet, there remain many powerful arguments for doing internal and clinical NHS “business” across a private network. A private managed service offers the potential of a faster and much more consistent and reliable service and the NHS has its own private intranet available for use now.
- 3-39** The *NHSnet* will be the best medium for the transfer of clinical information, but we must recognise the power of the Internet in the global development of information technology, in particular its rich source of academic information. The plan is to enable a community of networks taking maximum advantage of the features of a

managed service such as the *NHSnet*, and also accommodating developments within the wider Internet. Specifically, *NHSnet* already provides an SMTP relay service through a safe gateway to the Internet and should be enhanced to provide an SMTP mail service. This provides clinicians with an Internet mail address as well as an X400 email identifier. As technology allows, these should be integrated to appear as one to the recipient.

National infrastructure costs

‘there is little benefit, and considerable overhead cost, in billing NHS organisations separately for their use of national infrastructure’

- 3.40** Reluctance to connect to and fully exploit the *NHSnet* stems partly from clinicians’ concerns about security but also (and in no small way) from concerns across the NHS about the burden of messaging costs and the uneven distribution of costs and benefits between different parts of the service.
- 3.41** The problem of devolved costs for the national information technology infrastructure extends beyond *NHSnet* and raises an important practical issue for the NHS. There is little benefit, and considerable overhead cost, in billing NHS organisations separately for their use of national infrastructure. Local attempts to avoid these costs only undermine the achievement of strategic objectives, as is happening with *NHSnet* and the NHS-wide Clearing Service.
- 3.42** A simple and pragmatic solution to this impasse would be top-sliced funding and central payment of the messaging costs of the net. One way or another the NHS will meet these costs and a central payment will offer financial advantages. More importantly it clears the way for the NHS to put the NHS “Information Superhighway” to use across a whole range of activity and releases the net overall savings of over £100 million identified in the original business case.
- 3.43** Another reason given for reluctance to use *NHSnet* is the overly restrictive nature of Access Agreements and Code of Connection. It is important that the NHS maximises the potential use of networking for easy and effective communications between everyone involved in healthcare and health – including professionals, managers, academics, certain local authority and government department staff, and of course patients themselves. A review will be undertaken of the Access Agreements and Code of Connection to *NHSnet* to ensure the balance between arrangements for security and accessibility is appropriate.
- 3.44** The future use of *NHSnet* will also be explored in the light of the forthcoming Social Services White Paper to meet the requirements for information sharing with social services.

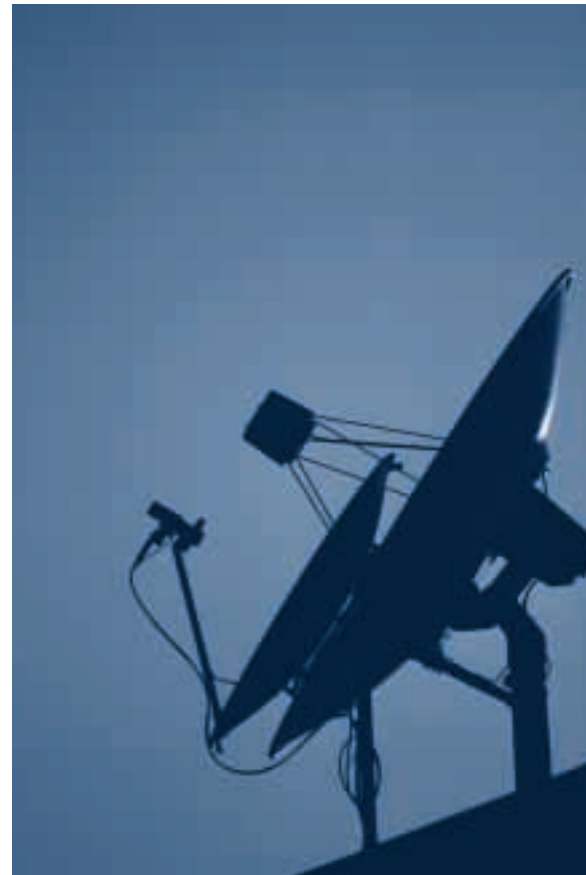
Voice and radio communications

- 3.45** Telecommunications in the NHS go beyond traditional data networking and the Internet. The NHS spends hundreds of millions of pounds every year on telephone services across the country and the vast network of radio systems to support the emergency ambulance and patient transport service. Both areas offer significant opportunities to save money and improve efficiency.

- 3.46** Voice telephony systems and *NHS Direct* offer one of the best examples of using technology to support telemedical services. Equally there are opportunities to integrate voice and data systems to achieve cost savings, and there is evidence that suppliers are tailoring their products for use in the NHS.
- 3.47** For too long the emergency ambulance and patient transport services have struggled with too few radio channels and ageing radio equipment, severely limiting their ability to reap the benefits of new technology. A government sponsored programme, the Public Safety Radio Communications Project (PSRCP) will build a brand new digital radio network for all emergency services to use.
- 3.48** This new digital radio infrastructure enables the seamless exchange of all information whether it is voice telephony, data or traditional radio, and facilitate closer working with primary, secondary and emergency service care groups. The NHS will ensure that the ambulance service is well placed to take advantage of this new service.

Wireless communications

- 3.49** The rapid development of wireless communications also affects the way in which technology is used within healthcare sites – the availability of reliable low-cost wireless local area networks provides much greater freedom to clinicians working within a hospital site and to staff working within the community.



Actions

Over time, the following national infrastructure will be centrally funded:

- The NHS Network – *NHSnet*
- The NHS-wide Clearing Service (NWCS)
- The NHS Strategic Tracing Service (NSTS)
- Clinical Terms licences
- The strategic messaging service
- FHS Exeter core systems.

The *NHSnet* SMTP relay service should be enhanced to include support for SMTP mail.

The Code of Connection and Access Agreements for *NHSnet* will be reviewed.

The NHS will ensure that the ambulance service is well placed to take advantage of the PSRCP.

Establishing a National Electronic Library for Health

- 3.50** For years, books and journals were the principal means of recording and communicating knowledge. Over time the sheer volume of printed reference materials on every subject known to mankind has continued to grow and professional library services have developed to provide knowledge management services and assist individuals in accessing specific information.
- 3.51** More recently the rapid expansion of the use of electronic media has revolutionised the storage and exchange of information. The use of the World Wide Web on the Internet brings vast amounts of reference material to anybody with access to a personal computer connected to the public telephone system.
- 3.52** Already there are millions of healthcare related items accessible on the Internet (eg, over 300,000 references to back pain). It is now routinely used by healthcare professionals for publishing and accessing reference materials and increasingly used by the public for accessing health related information.
- 3.53** In relation to the professional knowledge base, NHS professionals cannot possibly retain in their heads all current and emerging knowledge about the work they do. Healthcare is an international operation and the knowledge base constantly changes and grows. An illustration of this is the potential output of the National Institute for Clinical Excellence to be established as a consequence of *The new NHS*.

'NHS professionals cannot possibly retain in their heads all current and emerging knowledge about the work they do'

'... clinicians should receive fast and convenient access to appropriate knowledge bases to provide real time support to their care of individual patients'

- 3.54** There is a need to critically appraise the growing body of medical literature and evidence to ensure clinicians receive fast and convenient (ie, when and where required) access to appropriate knowledge bases to provide real time support to their care of individual patients. This will inevitably extend to cover access to "decision support" or "expert systems" (computer-aided decision making) as these are developed and accredited. Locally, some hospitals are reporting pathology results using intranet technology which contain links to relevant knowledge bases embedded in the report.
- 3.55** The NHS will make increasing use of the Internet and nonpublic websites on *NHSnet* for posting reference material. The organisation, accreditation and updating of such material is already an urgent requirement and presents an increasingly substantial challenge.
- 3.56** Although hard copy materials will remain the more convenient medium for many purposes, in addition to the information provided by library and other internal communication systems, NHS clinicians need "bedside" or "desktop" access to clinical and other evidence-based reference material during the course of their day-to-day work. Electronic media make it possible for more information to be provided during consultation, or whenever a decision is required, and will speed up the convenient access to worldwide sources of information.
- 3.57** Locally this should take the form of agreed guidance and protocols accessed on an internal "intranet" via the clinical information system. There is of course greater scope and benefit from local collaboration across primary and secondary care to produce, update and distribute guidance material.
- 3.58** As well as supporting direct patient care, there is an equally important need for those involved in planning and managing services to have ready access to a wide range of other information to support the best use of the national evidence base.

Accreditation of material

'there is now an opportunity to begin to develop from scratch an NHS accredited National Electronic Library for Health'

- 3.59** At present there is no comprehensive process of official NHS accreditation of the vast amount of clinical and health related reference material already available on the Internet. Responsibility rests on individual clinicians, patients and members of the public to make their own judgements about the validity of the material they access.
- 3.60** There is now an opportunity to begin to develop from scratch an NHS accredited National Electronic Library for Health (NELH). The technical means of access to the NELH will be driven by the requirements of its users. Because the *NHSnet* is a private managed network it can provide a fast, reliable and consistent level of service to NHS staff but there should also be public access to the NELH through use of public networks.

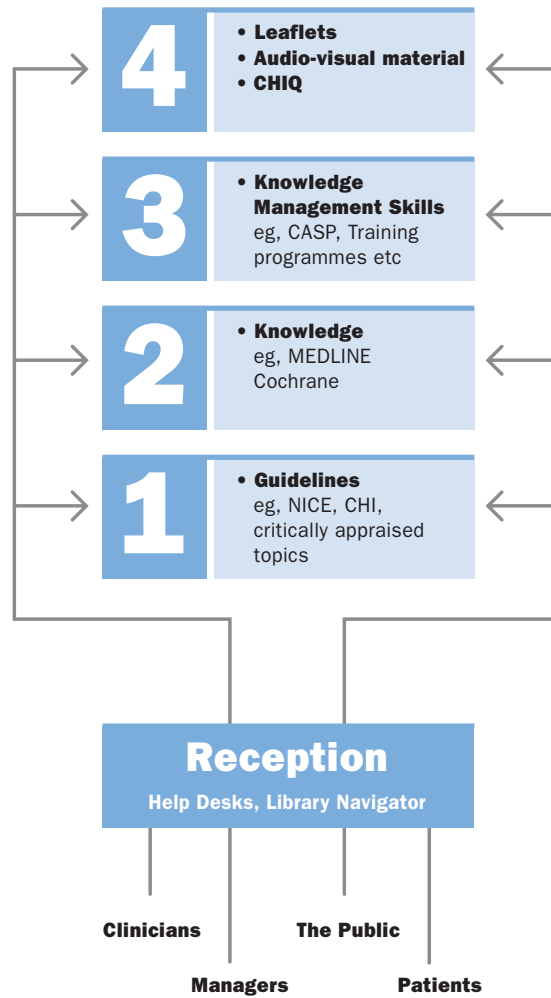


Figure 7 – The National Electronic Library for Health

- 3.61** Figure 7 diagrammatically illustrates how such a library might be constructed.
- 3.62** Once placed in the NELH material may be regarded as “official” and if preferred can be “signposted” in local intranets for access by NHS staff and patients.
- 3.63** The National Institute of Clinical Excellence (NICE) established by *The new NHS* has a remit to “produce and disseminate clinical guidelines based on relevant evidence”. NICE will be one of the major sources of accredited material for placing in the NELH. Similarly the Commission for Health Improvement (CHI) will be a source of useful material.
- 3.64** The NELH should also take account of the work of the national Centre for Health Information Quality (CHIQ) and in particular its expertise in the assessment and accreditation of on-line information resources.

Role of librarians

- 3.65** Although direct electronic access to knowledge bases offers a significant opportunity in itself, it will still be important to support clinicians and managers in navigating both electronic and printed resources. As such services evolve, librarians will continue to support clinicians and managers with access to the information needed for their daily work and to keep up to date with latest developments.



- 3.66** Design, development and implementation of the National Electronic Library for Health will need to be undertaken by a partnership of members of all healthcare professions together with library and information systems professionals. It must ensure coherence with the wider development of library services, to enhance rather than duplicate existing work.

Clinical decision support systems

- 3.67** A considerably more complex professional and technical challenge is presented by the development of computer-aided decision support systems for clinicians (sometimes referred to as expert systems). There is already considerable experience in areas such as prescribing support systems (PRODIGY) and in the protocols used by the *NHS Direct* service. The Academy of Colleges Information Group has expressed a strong view that such systems, whilst potentially of considerable benefit, must be subject to the most rigorous evaluation of reliability prior to use in live clinical care and wherever possible pilots or trials should be nationally supervised.

Management support

'... senior managers in the NHS must lead their organisations into the information age "from the front"

- 3.68** Apart from the opportunity presented by *NHSnet* to create the National Electronic Library for Health for clinical knowledge bases, it is a vital tool for day-to-day management information and transactions for the management community. Managers in the NHS receive a steady stream of reports and have built up (and need to use) vast paper-based reference sources covering an enormous range of issues.
- 3.69** Senior managers in the NHS must lead their organisations into the information age "from the front". With the new national email infrastructure in place the national NHS intranet (*NHSweb*) can be brought to life for the management community by developing an electronic "NHS Information Zone" containing on-line reference material for the NHS management community.

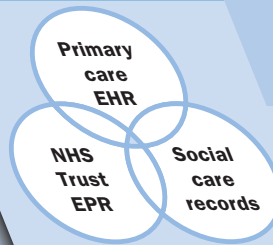
Actions

- A National Electronic Library for Health including accredited clinical reference material will be established.
- “Leading edge” work on the development of computer-aided decision support systems for clinicians will be centrally funded, evaluated and accredited.

National Strategy

Local implementation

Treatment and care

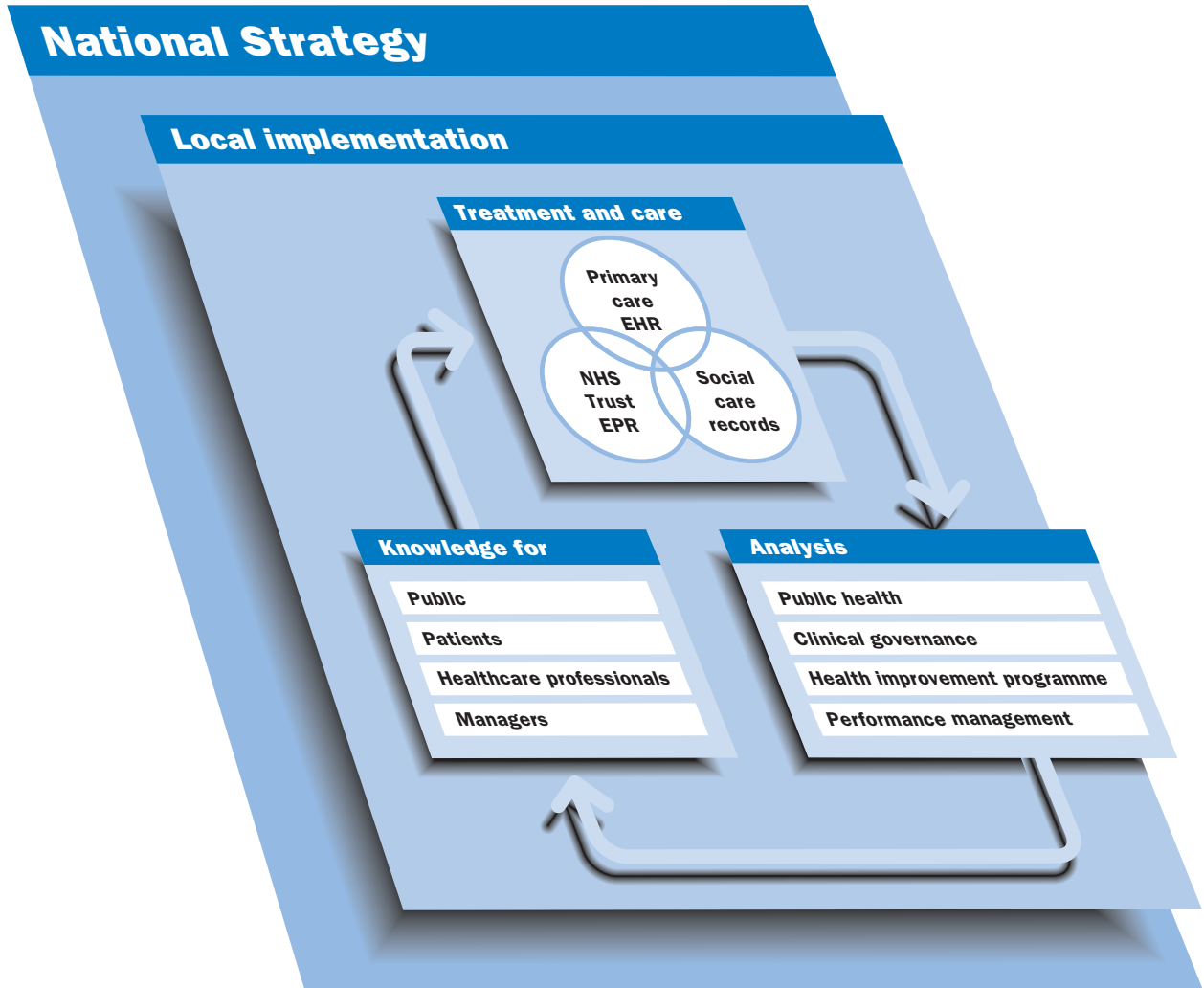


Knowledge for

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Analysis

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- Health improvement programme
- Performance management



4

Information for improving health and more effective management

Introduction

- 4.1** This chapter addresses the strategic objective:
- to ensure the availability of accurate information for managers and planners to support local Health Improvement Programmes and the National Framework for Assessing Performance
- 4.2** NHS managers and planners at every level in the service must have information that helps them better target and use the considerable resources deployed in the NHS to improve the quality of life for patients and local communities. Given the scale of public resources invested, the NHS must improve the current understanding of the cost/benefits of particular treatments and services and the considerable opportunity costs involved.
- 4.3** There is a vast amount of information which is potentially useful for these purposes and this information strategy should ensure the most useful information is captured in the most convenient way and is as accurate and up to date as possible. In particular, such information forms a natural by-product of the clinical systems required to support the day-to-day care of patients, described in Chapter 2. It will be important to maintain quality and coverage of statistical information whilst the capability to derive it from EPRs is developed.
- 4.4** *Our Healthier Nation* emphasises the value of all those organisations with an influence on health working in partnership – at the national and local levels. To be effective this work must be based on a range of information related to health such as housing quality, smoking levels, road accidents and environmental pollution.
- 4.5** This chapter addresses what must be done to improve the flow and use of information to:
- improve data quality
 - improve the health of the population
 - establish quality and support clinical governance arrangements
 - support local Health Improvement Programmes
 - deliver the National Framework for Assessing Performance
 - support National Service Frameworks.

'... a range of information related to health such as housing quality, smoking levels, road accidents and environmental pollution.'

- 4.6** These issues are specifically addressed in *The new NHS* and *Our Healthier Nation*, which set the agenda for the NHS in terms of its capacity to generate information for clinical quality improvement, performance management, planning, prioritising, decision making and working with Local Authorities and other agencies.

Improving data quality

- 4.7** When using information for management purposes, accurate and timely data is essential if those actions are to be appropriate and based on evidence. An urgent priority for the NHS is to improve the timeliness and quality of management information flows both locally and nationally. At present there are deficiencies in performance and attitude. There are many reasons for poor performance in this area (which must include poor or indifferent management) but there are four particular causes of the problem:

- a backlash to the collection of information that supports only management needs (eg, Finished Consultant Episodes)
- a perceived failure of the centre to limit the amount and type of information collected to that appropriate to national needs
- a failure to feed back useful analyses to those from whom information is collected (eg, Community Körner data)
- no incentives to collect good quality data and in some cases perverse incentives to provide inaccurate and untimely data to avoid censure for poor performance.

- 4.8** The introduction of the National Framework for Assessing Performance focusing on service quality and effectiveness offers the opportunity to create a new attitude in the NHS to information quality and a better informed public especially if:

- a responsive and credible benchmarking service can be delivered locally to support clinical governance and health planning, that is respected and valued by the clinical community
- there are inclusive processes for local staff, and especially clinicians, to own the information and make active use of it to promote local clinical improvements
- there are mechanisms for the public to be given useful information about NHS performance locally and nationally, especially when they themselves have contributed that data, for example through a national survey or anonymised aggregates of information from the Electronic Health Record.

- 4.9** A further step to improve the flow of data for the National Framework for Assessing Performance will be to require the use of *NHSnet* in conjunction with the NHS-wide Clearing Service (NWCS) for all suitable data flows coupled with strict performance management of submission dates. An early target for an additional data flow over the NWCS will be national waiting list returns.

‘... a perceived failure of the centre to limit the amount and type of information collected to that appropriate to national needs’



‘a specific indicator of data quality will be devised for inclusion within the National Framework for Assessing Performance’

- 4.10** Because of the importance of good quality data, a specific indicator of data quality will be devised for inclusion within the National Framework for Assessing Performance. Furthermore, formal data accreditation processes will be developed (where necessary) and applied to raise the quality of data and meet consistent standards.

Actions

- Use of the data accreditation process – which is currently voluntary – will be mandatory, beginning with the acute sector from 2000/01 and afterwards in other sectors. The outcome of the data accreditation processes will become a routine report to local Boards.
- Information agreements will be made between local NHS organisations in which data quality standards are agreed and audit mechanisms established to ensure adherence to these standards and to oversee the local data accreditation programme.
- A specific data quality indicator will be included as a part of the National Framework for Assessing Performance.

Improving the health of the population

‘The new NHS and Our Healthier Nation have created a substantial information agenda both nationally and locally to help improve the health of the population’

- 4.11** *The new NHS and Our Healthier Nation* (and other recent initiatives) have created a substantial information agenda both nationally and locally to enable the NHS and many organisations to work effectively towards improving the health of the population. Population health can be improved by the provision of better health services, but health can also be improved by many other interventions – for example through discouraging smoking, safer roads, better housing, reduced poverty and improved nutrition.
- 4.12** In many of these areas the Department of Health and the NHS can play a part, but other public services and organisations have major roles to play which often overshadow the opportunities for the NHS alone. Therefore many organisations have health related responsibilities and also other opportunities for contributing to improved health – through their employment policies for example.
- 4.13** The Government has reinforced its commitment to this approach by appointing for the first time a Minister for Public Health to coordinate health policy across Government, not just in the Department of Health.

'... developing Health Improvement Programmes'

- 4.14** Health Authorities and Primary Care Groups work locally to improve people's health through:
- assessing the health of the population and ways of improving it
 - developing the commissioning priorities of Primary Care Groups
 - ensuring that local health services are effective and meet local needs
 - advising Local Authorities and others of their opportunities for improving health, together with the impact of their policies on health
 - working with Local Authorities and other organisations to improve health
 - developing Health Improvement Programmes.
- 4.15** They also have specific responsibilities in relation to clinical governance, the National Framework for Assessing Performance and supporting National Service Frameworks which are considered later in this chapter.
- 4.16** There is a fundamental change in emphasis of Health Authority information responsibilities (from contracting to public health and service effectiveness) and a need to establish a two-way flow of information between the NHS and the communities it serves. This suggests the development of Health Authorities' information capability may need specific attention in the implementation programme for *The new NHS*, the Public Health White Paper (in due course) and the implementation of this strategy. The effective use of the informatics skills of current public health practitioners will be particularly important.
- 4.17** Health Authorities and their Directors of Public Health already have access to a variety of nationally produced public health, epidemiological and mortality data. The data presented in the Public Health Common Data Set is of particular value. This will be supplemented by the new National Framework for Assessing Performance which is currently being road-tested. However, the range of the data available needs to be extended if the vision of *Our Healthier Nation* and the consequent increased responsibilities are to be met. The information that may be needed to assess resistance to antibiotics is an example of the need to keep information requirements under review.
- 4.18** Information from the NHS is vital – to indicate whether services are effective and to contribute to an assessment of the health of the population. The implementation of this strategy will improve the relevance, quality and availability of this source of information especially when the first generation of Electronic Health Records becomes a reality.

Coordinating health related information

- 4.19** Much information relevant to health is produced nationally by the Office for National Statistics, the Department of Health, other government departments (Department for Education and Employment, Department of Trade and Industry, Department of the Environment, Transport and the Regions, Home Office), and other national organisations.
- 4.20** Health Authorities have a duty to work with other organisations in their locality to improve health. Directors of Public Health have responsibilities to advise local authorities and others about the health of the population and how they can improve it – for example through their Annual Reports. This broad range of work needs to be supported by a correspondingly wide range of information. A coordinating mechanism is required to make the necessary information available to all those with responsibilities and opportunities for improving health and to ensure opportunities for obtaining health related data or analysing health issues are not missed.

Actions

- Health Authorities will ensure that the informatics skills of current public health practitioners are used most effectively.
- Health Authorities will take the lead in coordinating the use of local health related information and establish mechanisms for this that involves a wide range of organisations.

Improving quality and supporting clinical governance

‘... clinical governance ... will highlight the need for quality clinical data’

- 4.21** *The new NHS* introduced requirements for clinical governance, one of which is that the quality of data collected to monitor clinical care is itself of a high standard. The demanding requirements for clinical governance, coupled with the need to report to Boards on a monthly basis, will highlight the need for quality clinical data, and areas requiring specific local action. The existing national data accreditation programme will be reviewed to see whether it should be extended to cover clinical data areas.
- 4.22** *A First Class Service* highlighted the fundamental importance of improving the quality of care throughout all areas of the NHS. This is because performance management processes simply designed to target outliers will eventually eliminate the extremes of poor performance but may not improve mediocre or average performance, and therefore fail to benefit the vast majority of patients.
- 4.23** Continual improvement of clinical service quality across the NHS must be supported by information on current comparative effectiveness and outcomes. It also requires a culture amongst clinical staff where the obligation on individuals to assess personal performance continually is accepted as a natural and important element of being a professional.

'... clinical governance requires quality improvement, evidence-based practice, and monitoring of clinical care using clinical records'

The need for EPRs and EHRs in enabling effective clinical governance

- 4.24** Implementing a framework for clinical governance requires a comprehensive programme of quality improvement such as clinical audit, and evidence-based practice and processes for monitoring clinical care using effectiveness information and clinical records systems. To achieve this, information must be drawn from:
- local clinical audit data
 - national comparative data
 - local care pathways and clinical protocols
 - national best practice guidelines
 - National Institute for Clinical Excellence evidence
 - international research evidence.
- 4.25** All this means statistical data must be linked with textual reference material. EPRs and EHRs provide the source of the base anonymised and aggregated data to support the clinical audit process and over time they will contribute to the growing knowledge base informing the development of local and national guidelines.

Developing informatics skills

- 4.26** As NHS clinicians address the obligation continually to review and improve personal effectiveness through evidence-based practice and clinical audit, they face several problems:
- the variable quality and reliability of information
 - a dearth of local clinical informatics expertise
 - a lack of personal keyboard skills
 - pressure on their time.
- 4.27** In the longer-term the EHR will be a key source of information for analysis. The immediate concern is improved access to current EPRs, such as those held by GPs, and clinicians must acquire the skills required to analyse this information and act on their findings.



'there is ... an urgent need for Health Authorities and NHS Trusts to review their clinical informatics resources available for effective clinical governance'

- 4.28** The shift in emphasis in this strategy to a broader set of performance measures on quality and effectiveness as well as efficiency, signals an urgent need for Health Authorities and NHS Trusts to review their clinical informatics resources available for effective clinical governance. With information more easily accessible and with improved tools for analysis, time should be less of a constraint than at present.

Actions

- Health Authorities and NHS Trusts will urgently reassess the adequacy of local clinical informatics support in relation to the requirement in *The new NHS* to ensure locally effective clinical governance.
- The national data accreditation programme will be reviewed to consider whether it should be extended to include clinical data quality.

Information for local Health Improvement Programmes

4.29 *The new NHS* and *Our Healthier Nation* (and other recent initiatives) also created a substantial information agenda for Health Authorities for the collation and interpretation of information to support the local Health Improvement Programme and the commissioning priorities of Primary Care Groups. The performance management responsibilities of Health Authorities in regard to the overall effectiveness of all local health services (particularly the contribution of NHS Trusts, GPs, Primary Care Groups, Primary Care Act Pilots etc) are also a major challenge to their information resources.

4.30 Identifying the needs and measuring the health of different local communities to support the provision of more effective healthcare is an important part of the Public Health function. Health Authorities and their Public Health directors already have access to a wide variety of nationally produced data, and this will soon include analyses from the new national Health Survey and the National Framework for Assessing Performance.

Accessing primary care data

'... much of the Körner community details are of little value'

4.31 Developing these new sources of data will take some time and an urgent issue for Health Authorities and Primary Care Groups is the relative lack of access they normally have to information about primary and community care. Using aggregated data from integrated primary and community care information systems – and eventually EHRs – will provide data on the health of the population and the use and effectiveness of health services. At present much of the Körner community details are of little value – knowing how many patients are seen by district nurses is not the same as knowing that patients who need district nursing services actually get them. The most valuable repository about the current health of the population may well be GP records and it is ironic that these are virtually unused for local health surveillance and service audit.

4.32 One remedy for this deficiency is to establish a local flow of information drawing on primary care records. This allows analysis of the overall packages of care provided to particular groups of patients for whom there may be agreed local or national care profiles or pathways – for example for people with asthma, diabetes or hypertension. Access to this sort of information also allows analysis of the comparative incidence of illnesses at the practice level as a means of identifying and targeting unmet needs.

- 4.33** There are a number of technical options for accessing this data. A national project is currently piloting the use of software (MIQUEST) to extract useful information of this kind from GP systems. Used by GPs and their local Health Authorities this can support local health needs assessment, resource targeting and service audit. The recommendations in this report for the development of Electronic Health Records in primary care will lead to considerably more complete and electronically available information on the use and provision of local health services.

Actions

- Health Authorities – in partnership with local GPs – will implement systems that make use of the information contained within primary care systems to support local health needs assessment, service audit and health service planning.

Delivering the National Framework for Assessing Performance

- 4.34** The information requirements to support the National Framework for Assessing Performance (NFAP) and associated High Level Health Authority indicators are well beyond the scope or reliability of currently established information flows. Successful delivery of this framework is a fundamental prerequisite to realising the vision in *The new NHS* that the performance of the NHS should be managed in terms of effectiveness as well as the more traditional bottom line measures.

- 4.35** Good quality national data is required to:
- inform the development of national policy
 - provide an overall assessment of the performance of the NHS as a whole
 - inform the development of local initiatives and the Health Improvement Programme
 - enable comparisons to be made of the performance of Health Authorities and providers of healthcare.

‘it is essential that the data is relevant, complete, comparable, stable over time and readily available for these purposes in a timely way’

- 4.36** It is essential that the data is relevant, complete, comparable, stable over time and readily available for these purposes in a timely way. Current data sets and data collection systems were established to assess the quantity of care, rather than its quality. Much work will therefore be required to develop them to meet modern needs.

- 4.37** At an early stage it will be important for the NHS Executive to establish unambiguous responsibility for ensuring that the NHS captures and communicates promptly, accurately and efficiently the information necessary to prepare the National Framework for Assessing Performance analyses. Whilst Ministers and the NHS Executive will make considerable use of the NFAP for national performance management and policy “intelligence”, it must also be able to provide a

sophisticated and detailed benchmarking service to the NHS to support local performance management, Health Improvement Programmes and clinical governance. Careful consideration is needed of the most effective mechanism for managing the National Framework for Assessing Performance at a national level.

The community Minimum Data Set

'... the case to abandon the development of a single episodic MDS for community health services is strong'

4.38 It is clear from the critical reappraisal of the 1995 community Minimum Data Set (MDS) proposals that the proposed contract orientated data set will not meet the needs of local commissioning or the national performance framework. Although in mental health and maternity services indications are that work on the MDS is useful, the case to abandon the development of a single episodic MDS for community health services is strong. An equally urgent concern of community based clinicians is the substantial amount of time taken in recording data for central statistical returns that does not flow naturally from the care process and which is of little or no value to their treatment of individuals or for retrospective evaluation. There is little evidence that the collection of Körner data in community services offers managers anything useful for gauging either value for money or effectiveness in community services.



4.39 There is therefore a compelling case for review of the cost and benefits of the time spent by community staff on collecting data for Körner returns. Where the cost of collection – particularly in professional time – is disproportionate to the total value of the data collected, then collection of the community services Körner data should in due course cease. Abandoning the current and inappropriate “performance” data collection for community services will confront the NHS in general and Health Authorities in particular with an urgent need to shift attention from merely collecting statistics as a substitute for effective performance management towards the real community information agenda, namely:

- modernising primary care information systems
- integrating primary and community care information systems
- using information captured in operational clinical systems to provide secondary data flows
- developing primary and community care effectiveness indicators for local and national performance management
- developing the means to extract the information needed automatically from primary and community care information systems to meet the needs of the National Framework for Assessing Performance.

'This is clearly a medium to longer-term development agenda'

- 4.40** This is clearly a medium to longer-term development agenda and in the short term the NHS may need simple interim measures for benchmarking the relative value for money of local primary and community services. Work on the critical reappraisal of the community MDS provides a useful foundation for this agenda and it will be important to build on the already significant clinical professions' input to the reappraisal process.

Groupings

- 4.41** Use of patient-based information is made more difficult at both clinical operational level and Health Authority/Primary Care Group level by the lack of tools to aggregate it in consistent and comparable ways. Defined aggregations of clinical terms, agreed at national and local levels as appropriate, will help ensure good quality data for statistical use and the link to widely used classification systems such as ICD-10 for diagnoses and OPCS-4 for procedures.
- 4.42** Health Benefit Groups and Healthcare Resource Groups are also useful tools, but as well as existing HRGs for costing acute inpatient care, there is a need for similar development in other healthcare settings, and in other elements of the National Framework for Assessing Performance. This requires the work on HBGs and HRGs to be extended and integrated with other initiatives such as Outcome Indicators, Needs Assessment and the National Framework for Assessing Performance. This will enable analysis of effectiveness and efficiency, including outcomes, appropriateness and equity, and support needs assessment and the framing of commissioning agreements. By developing standard groupings and associated software, it is possible to use the increasing amounts of patient-based data for these tasks which are fundamental to the new NHS, without large investments in analytical resources.

National returns

- 4.43** It is important to recognise that even where much local management data can be extracted from operational care systems, a system of national central returns will still be required to support national planning activities, the national elements of the National Framework for Assessing Performance and to ensure the NHS is accountable to Parliament. Examples of the sort of areas that will need to be covered include workforce and facilities information, as these cannot be derived from operational care systems.

Actions

- Consideration will be given to the most effective mechanism for managing the National Framework for Assessing Performance at a national level.
- The National Framework for Assessing Performance will be used as basis for providing a national benchmarking service to support the development of Health Improvement Programmes and local clinical governance.
- Current work to develop a single episodic Community Minimum Data Set will be abandoned, but will serve to inform the need for a more clinically relevant alternative based on the reappraisal report.
- There will be an urgent review of the justification for the time spent by community health staff in collecting data for Körner returns.
- New interim measures of primary and community care value for money and effectiveness will be identified pending availability of better performance management information from integrated community services information systems.
- Work to develop classification and casemix groupings will be continued and integrated closely into the development of the performance framework and commissioning development process.
- The use of *NHSnet* and NWCS will be mandated for data flows to support the National Framework for Assessing Performance.
- An early date will be set for the use of the NWCS to submit national waiting list data.

Supporting National Service Frameworks

- 4.44** Gathering the best evidence of clinical and cost-effectiveness and relating that to the views of service users to determine the best ways of configuring the provision of particular services is an important new approach which relies on information.
- 4.45** The description of a National Service Framework in *A First Class Service* indicates the extent of the local change agenda and the role of information and technology. While technology is not a solution in itself, in some circumstances it will enable change, for example, through the introduction of systems to collect and audit data along a care pathway and share information between organisations.
- 4.46** *The new NHS* uses the development of cancer services in the Calman-Hine report as an example of a National Service Framework. Using such frameworks in the development of integrated care across all parts of the service requires information to be primarily person-based rather than organisation-based.

‘... integrated care across all parts of the service requires information to be primarily person-based rather than organisation-based’

'National Service Frameworks ... can help prioritise the development ... of care group/disease specific information strategies'

- 4.47** The rolling development of National Service Frameworks arising from *The new NHS* may provide a helpful mechanism for prioritising the development – under the auspices of the Clinical Information Management Programme (CIMP) – of care group/disease specific information strategies with associated core clinical data sets.
- 4.48** Work on a Cancer Information Strategy is underway. It will illustrate how the different parts of *Information for Health* can be addressed in the context of a particular condition. Another example is in children's services, where there is a need to define the data sets to be collected and exchanged between those clinicians and others responsible for the provision of child health services.
- 4.49** The change in focus to condition or care group from institutional perspectives is welcome, but such approaches need a common core that enables data on patients with more than one condition to be processed.

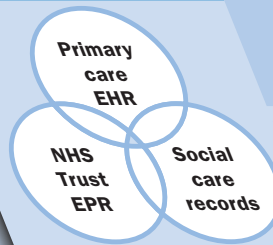
Actions

- The development of National Service Frameworks will be supported with the development of associated condition-specific information strategies and clinical data sets.

National Strategy

Local implementation

Treatment and care

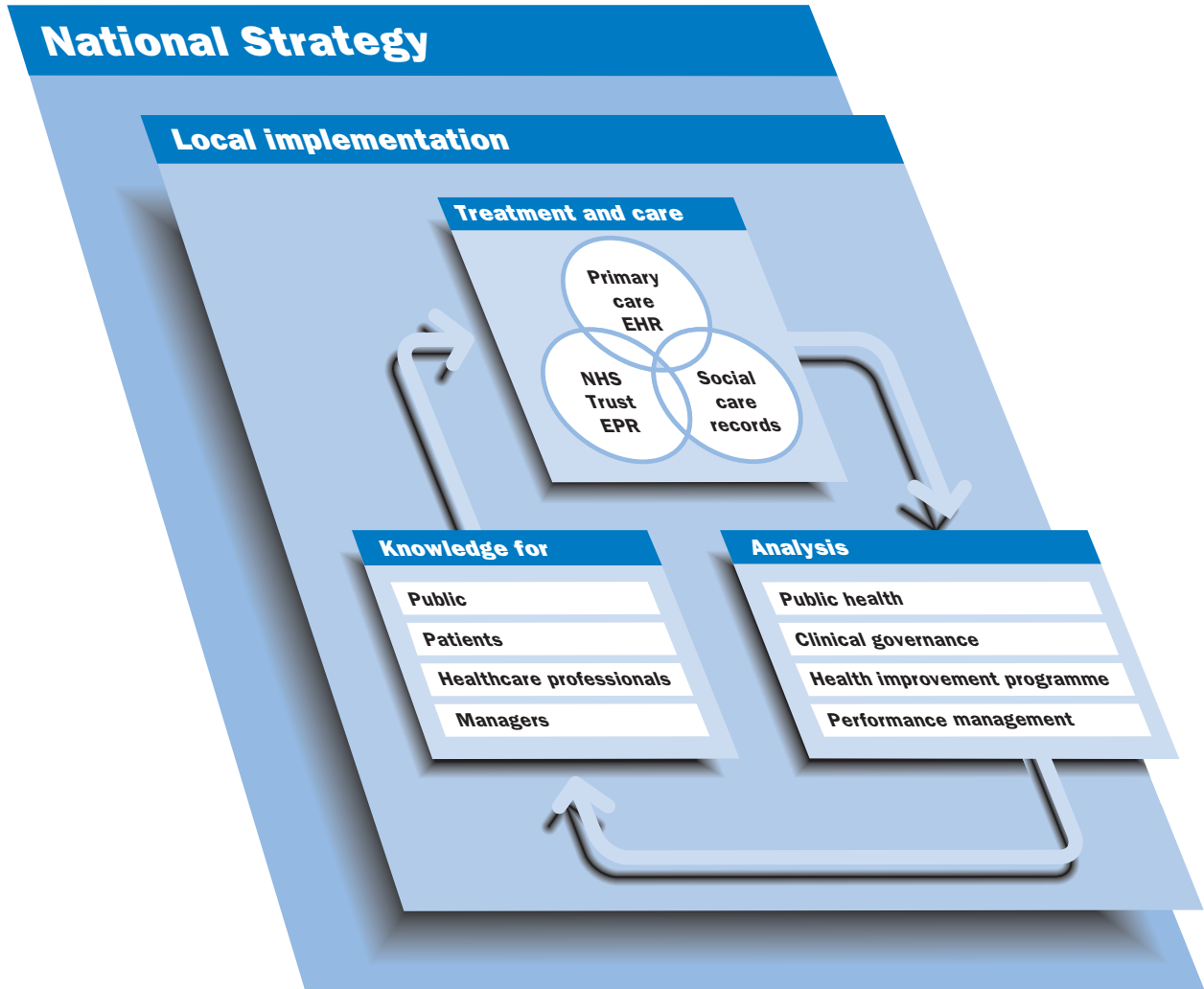


Knowledge for

- Public
- Patients
- Healthcare professionals
- Managers

Analysis

- Public health
- Clinical governance
- Health improvement programme
- Performance management



5

Meeting public and patients' needs

'... the new information strategy should be a vehicle for improving the way NHS services are delivered, making them more responsive to patients' needs'

Introduction

- 5.1** The latest information technology presents huge opportunities to improve the quality and accessibility of health services to patients and the public. The Government is determined that the new information strategy should be a vehicle for improving the way NHS services are delivered, making them more responsive to patients' needs. Improving the quality and range of information available to patients and the public about health and health services will be equally important.
- 5.2** This chapter addresses the strategic objectives:
- to eliminate unnecessary travel and delay for patients by providing remote on-line access to services, specialists and care, wherever practicable
 - to provide access for NHS patients to accredited, independent, multimedia background information and advice about their condition
 - to provide fast, convenient access for the public to accredited multimedia advice on lifestyle and health, and information to support public involvement in, and understanding of, local and national health service policy development.

Improving patients' services through technology

- 5.3** Delivering healthcare services over time and distance is not a new concept in healthcare. However, one of the greatest potential benefits of new technology in the NHS is the opportunity to improve the quality of care by making information faster and more easily available to patients, specialist advice and support more accessible to GPs and other professionals, and by bringing services closer to peoples' homes.
- 5.4** In earlier chapters we have given examples of the enormous potential for the use of technology to provide better services to patients including:
- Electronic Patient Records to pave the way for more effective and user-friendly patient booking and appointment systems and other improvements
 - the ability to provide much speedier diagnostic and test results to reduce the time patients currently wait to receive these results

- providing on-line advice and information to patients and carers, eg, through the development of *NHS Direct*
- improving local access to distant services and specialist advice and support, eg, through telemedicine and telecare
- offering patients a faster service with more choice when collecting prescriptions through development of links between GPs and community pharmacists
- harnessing IT to reduce unnecessary patient referrals, treatments and visits, and provide better coordinated services (eg, through better sharing of information between the different agents providing care).

'telemedicine and telecare will undoubtedly come to the fore as a way of providing services in the future. They have a key role to play in the Government's plans to modernise the NHS'

- 5.5** Telemedicine and telecare will undoubtedly come to the fore as a way of providing services in the future. They have a key role to play in the Government's plans to modernise the NHS. Their development must be managed in a coordinated way, to ensure the benefits are properly identified and applied and scarce IT and other resources are not consumed ineffectively and inappropriately. An early priority will be a framework to guide the development and application of telemedicine and telecare.
- 5.6** *NHSnet* is an important means of connecting hospitals and GP surgeries that will facilitate telemedicine services. Using real time or store and forward applications and audio, visual and data technology, health professionals in one location will be able to access the advice and support of colleagues in another and, where appropriate, involve them directly in patient consultations and treatments.
- 5.7** The programme to pilot *NHS Direct* and roll this service out to all parts of England by the year 2000 is a vital first step for the NHS in using new technology to change the way NHS services are provided. It will be more than a traditional telephone helpline with the potential to provide a convenient home-based gateway to information and services covering the whole area of NHS activity. For instance, its call centres could provide a platform for the development of telemedicine and telecare services.
- 5.8** Telemedicine and telecare can help to modernise the NHS. NHS organisations will need to demonstrate that they have appraised and where appropriate included telemedicine and telecare options in Health Improvement Programmes, associated service strategies and capital business cases.

'... NHS Direct will progressively develop a role as a wider gateway to the NHS'

Actions

- A framework will be published in early 1999 to guide and support the development and application of telemedicine.
- *NHS Direct* services offering telephone information and nursing advice will be available to the whole of England by 2000. *NHS Direct* will progressively develop a role as a wider gateway to the NHS including the piloting and development of appropriate telemedicine and telecare services in partnership with health and social care providers.
- From 2000 all Health Improvement Programmes and associated service strategies should specifically incorporate plans and proposals to improve the quality and pattern of services through the appropriate use of telemedicine and telecare. Capital business cases should demonstrate that telemedicine options have been identified and appraised.
- Work will be undertaken to explore ways of providing patients with more choice and reducing waiting times for collection of prescriptions through links between GPs and community pharmacists.

Improving public access to information on health and health services

5.9 Access to the right information at the right time is a crucial ingredient of modern healthcare. Across the world there is a growing interest in information about health and health services. Improving access to information is an important part of the Government's strategy for delivering the objectives for improving health and health services in *The new NHS* and *Our Healthier Nation*.



- 5.10** A well informed public on health and health services means:
- people have more autonomy and control over their own lives and more choice
 - more appropriate and effective use of services
 - a reduction in the burden of inappropriate calls on the NHS.
- 5.11** Improving access to information on health and health services should also:
- promote a healthier population better able to look after themselves
 - secure better public accountability for the NHS
 - develop a better public understanding of the present and future patterns of health service delivery.

'... public information should be sensitive to the different needs of different groups and the various ways people seek and use health information'

- 5.12** People need information about health and healthcare in many different circumstances. Patients want to know more about what is wrong with them and how they can best look after themselves. Carers or relatives or friends seek information on behalf of others. Interested members of the public wish to contribute to the debate about local healthcare services. The provision of public information should be sensitive to the different needs of different groups and the various ways people seek and use health information.



- 5.13** The development of new media such as Internet and digital television offer enormous opportunities to widen access by the public to information about health and health services. Through these media an unprecedented range of information, services and facilities will be available. In particular the advent of digital television will allow a person, from the comfort of their own armchair, to search for information in health related databases across the world, seek advice from a variety of helplines, watch broadcasts of public meetings, share experiences with other people in similar situations and take part in discussion groups or book or change appointments at the hospital or health centre. New technology, such as voice-activated software, can overcome the poor access to information experienced by many people with disabilities.

'... the opportunities of the information age must be open to all'

- 5.14** At the same time the emergence of new media runs the risk of creating new problems of access. It will be important to ensure that strategies for providing public information on health and health services take account of the needs of the "information poor" and those sections of society without access to some of the new media. The opportunities of the information age must be open to all.
- 5.15** Over the next couple of years a number of developments should help improve both access to and the quality of information to the public on health and health services.

Health Information Service and NHS Direct

- 5.16** Since 1992 the Health Information Service has run a telephone helpline for the public on a national freephone number. From the end of the year 2000 *NHS Direct* will be available in all parts of England providing quick 24 hour telephone access to health information and nursing advice. Work will be undertaken to look at the relationship between *NHS Direct* and the Health Information Service and to ensure that *NHS Direct* draws on the best practice of the Health Information Service. To help them in advising patients *NHS Direct* staff will be supported by a wide range of on-line databases and by a wide range of links to health services and other specialist helplines to ensure that, if the caller chooses, they can be seamlessly referred to other sources of advice and help.

'the public and patients need access to accredited health information'

Information quality

- 5.17** There is a need to signpost information sources, to give the public easy access to relevant information. There is also a need to develop, through a process of accreditation, access to information which the public and patients can rely on and which is presented in a clear and intelligible way. As part of its Patient Partnership strategy, the NHS Executive has already set up the Centre for Health Information Quality (CHIQ). The role of CHIQ is to work with the producers of information for the patients and the public to improve its quality, accessibility and evidence base. The intention is to develop the capacity of CHIQ over the next few years to achieve a greater impact on public information on health and health services provided in the NHS.

Establishing a gateway to health information on the Internet

'... a National Gateway site to the Internet would allow the signposting of recognised sources of health information'

- 5.18** The Internet provides access to an enormous range of information on health and health services. The main difficulty for the user is to easily locate what they are searching for and to validate the quality or source of any information once found. The development of a National Gateway site to health information on the Internet would allow the signposting of recognised sources of health information on the Internet and would permit some accreditation of information sources.

Public access to the National Electronic Library for Health

- 5.19** The National Electronic Library for Health should also provide a common point of public access to a wide range of knowledge bases. Much of this information already exists but is dispersed across many organisations and agencies. Details on the National Electronic Library for Health could include:
- information on healthy lifestyles
 - information about medical conditions, diseases and treatments
 - information about the effectiveness of different treatments
 - Annual Reports of Directors of Public Health, describing the health of people locally and ways of improving it
 - a reference guide to who does what in the NHS
 - health service "management" information – a form of "Annual Report for the NHS" to show how resources are used, in a consumer-friendly way
 - health service performance – bringing together the outputs of various NHS Charter measurements with the outputs of the new Patient Survey and also published local performance information on local clinical effectiveness, outcomes, waiting times etc.
- 5.20** A variety of communication channels and media, both electronic and non-electronic, can be used to create public access to the library. This includes exploring the potential of new media such as digital television and the Internet and establishing links with other public service delivery agencies especially Local Authorities as a way of making access to the national public library through schools, libraries, workplaces etc.

Involving patients, carers and the public

- 5.21** More can be done to involve the public themselves in defining their information needs and in ensuring that the way in which information is put together, presented and provided meets those needs. The advent of interactive media such as digital television considerably increases the scope for this. There are examples in the NHS and Local Authorities of projects to involve communities in establishing their own information services. Similarly organisations such as CHIQ and the Cochrane Library already involve lay people in their work. There is scope for CHCs and other organisations representing patients and carers to take a leading role here.

Support for NHS staff

- 5.22** It is important to develop a culture among NHS staff that promotes a positive attitude to patients' rights to give and receive information. Staff need resources and advice about the range of high quality sources of information available and the variations in their quality. As a first step the NHS Executive has commissioned research into the implications for clinicians of increasing patient access to information.

'it is important to develop a culture among NHS staff that promotes a positive attitude to patients' rights to give and receive information'

The local agenda

- 5.23** NHS organisations need to consider the local need for providing information to patients and the public, drawing on National Electronic Library resources as appropriate and establishing arrangements with local agencies for access to such information in the community. Local plans will need to be clear on how the NHS organisations, including organisations representing patients and carers, will work in partnership within the NHS and with non-NHS agencies, over a period of time, to:
- define the nature of the information products and service they will provide for patients and the public
 - agree the source of this material, at both national and local level
 - agree how this information will be disseminated, and the most appropriate media and formats to use.
- 5.24** Details of local information to be included are:
- local services – which hospitals/clinics provide what sort of services
 - local facilities including travel arrangements
 - local support groups for specific conditions.
- 5.25** The provision of information for patients and carers should then become an integral part of local service agreements, to ensure that the provision of information to patients is seen as an integral part of the local clinical care process.

Actions

- *NHS Direct* will provide 24 hour access to telephone information and nursing advice. It will also provide onward referral, where the caller wishes it, to other health services and specialist help lines.
- The role of the Centre for Health Information Quality will be strengthened to enable it play a stronger role in accrediting patient and public information material produced in the NHS.
- A National Gateway site to health information services on the Internet will be established.
- Steps will be taken to ensure public access to the appropriate parts of the National Electronic Library for Health.
- Measures will be taken to support a positive culture amongst professional staff in the NHS to the provision of information to patients.
- Local NHS bodies will develop a partnership strategy for the provision locally of public information on health and health services which makes effective use of national resources such as the National Electronic Library for Health.

National Strategy

Partnership arrangements

NHS Executive

Information Policy Unit
Regional Offices

Local organisations

- NHS Trusts
- Primary & Community Care
- Health Authorities
- Social Care

NHS
Information Authority

- Professional organisations
- Health management
- Suppliers
- Academic institutions

6

Making it all happen

Introduction

- 6.1** To implement the new information strategy successfully, new partnerships are required across all professional disciplines to secure greater understanding of the need for better information to support the work of the NHS and greater commitment to ensure this is delivered.
- 6.2** This chapter addresses the key challenges faced by all those involved in delivering the new NHS information strategy, and then outlines the required actions at the national and local levels.

Current challenges

‘many Chief Executives have put this agenda in the “too difficult” box’

- 6.3** Over the past decade, the combination of apparently distorted priorities and the high-profile failures of IM&T implementation has seriously undermined the support of the clinical community for a national information strategy and encouraged many Chief Executives to put this agenda in the “too difficult box”. These problems are heightened by a number of factors that have frustrated progress with the IM&T agenda both nationally and locally, including:
- an impression that IMG was remote from the service and that the former national strategy aims were not relevant to local operational realities
 - resentment about local charging for access to the national IM&T infrastructure
 - a reluctance to mandate local compliance with national strategic objectives
 - the poor quality of recorded clinical data, resulting in a relative lack of appropriate information for public health or managerial purposes
 - well publicised “failures” which have created a mythology of disaster around IM&T in the NHS
 - the complexities of the IT procurement processes
 - an insufficiently understood and committed informatics culture amongst the wider professional community in the NHS, illustrated by poor quality clinical record keeping and communication, and a lack of commitment to clinical audit
 - the absence at local level of a mechanism to coordinate the development of information strategies and associated IT investments

'... information and IT is a critical Chief Executive issue and is not the preserve of IT specialists'

- a lack of understanding amongst many NHS managers that information and information technology is a critical Chief Executive issue and is not the preserve of the IT specialists
- a failure to appreciate the full potential of radical changes in working practices made possible by modern information technology.

6.4 The new strategy has its roots in the ambivalent attitude throughout much of the NHS to what many regard as a difficult, risk laden and unaffordable agenda. This strategy seeks to propel the NHS into a new age that delivers tangible benefits within a reasonable time-frame. However, there is no doubt that it represents a significant management challenge for the service, both locally and nationally.

A new national information partnership

'this new information strategy must succeed. Whether at the policy, management or clinical level the NHS cannot deliver its objectives without the information it needs'

6.5 This new information strategy must succeed. Whether at the policy, management or clinical level the NHS cannot deliver its objectives without the information it needs. Effective information flows at local and national level are fundamental and all professional disciplines need to understand the fundamental need for better information to support the work of the NHS.

6.6 The over-riding implementation principles will be:

- a national consensus on the objectives to be achieved
- effective and continuous dialogue between stakeholders
- centrally mandated deliverables within specified timescales
- the development and application of a policy for key information management and technical standards
- integrated local implementation of the National Information Strategy
- performance management.

6.7 The key partnerships necessary to ensure success will be between:

- the Government and the NHS
- the NHS management and clinical communities
- key NHS stakeholders and NHS Executive policy-makers
- local NHS and social care organisations
- the NHS and information systems and services suppliers
- the Government, the NHS and the patients, carers and public whom they serve
- all organisations that can influence the health of the population.

6.8 Success will require concerted national and local effort.

Action at the national level

- 6.9** For the strategy to be delivered effectively at the national level, we need highly motivated, well led, fully coordinated partnership arrangements in relation to four key processes:
- stakeholder input
 - policy development
 - national programme management
 - performance management.

Stakeholder input

'the development of policy, and the management of national IM&T projects, must be guided by the needs of the various stakeholders'

- 6.10** The development of policy, and the management of national IM&T projects, must be guided by the needs of the various stakeholders.
- 6.11** Without the involvement of the NHS, patients and the public in giving guidance about the services that are needed to deliver better care, and the associated information requirements, there is little ownership of the information policies that are developed, or any inclination to be involved in their implementation.
- 6.12** Such guidance requires effective partnership arrangements to be in place. There are a number of bodies whose views, expertise and ownership must be secured and where national and local partnerships must be strengthened to provide information for *Our Healthier Nation*.
- 6.13** The emerging stakeholders arrangements include:
- a variety of arrangements for obtaining advice from the clinical professions to the NHS Executive and Department of Health on information issues include the Clinical Systems Group, and associated clinical information advisory groups. These arrangements must be viewed as embryonic when compared with the real challenge of fully engaging all the clinical professions in *Information for Health*.
 - patients and carers have much to offer in identifying and developing material for their needs and effective ways to engage them at both national and local levels must be found
 - more effective arrangements are also needed to ensure that the NHS management community can exercise its influence on national information policy and project management. Work is underway in establishing a Chief Executive IM&T Forum as one means of gaining management input into the partnership



'suppliers' expertise in IM&T for healthcare should be exploited on a mutually beneficial basis at both local and national level'

- a healthy market for information systems and services suppliers will benefit everyone. Suppliers represent a large body of specialist expertise, and research and development in IM&T for healthcare which should be exploited on a mutually beneficial basis at both local and national level. Arrangements for the supplier community to provide advice and influence national policy must be strengthened
- the emphasis on collaboration with other public services also requires partnership arrangements both nationally between government departments and locally between individual NHS and other organisations. The experience of Health Action Zones will help identify how to do this effectively
- the academic sector has an important role in implementing certain aspects of the strategy, especially in education and training. The developing partnerships between the NHS and academic organisations in the National Institutes for Health Informatics can be used to strengthen the involvement of universities and other educational establishments
- in many aspects of health and social care voluntary bodies play an important role, and their contribution to the partnership will also need to be taken into consideration.

Action

- Early action will be taken to identify and consult with national stakeholder groups about the most effective method of enabling participation in the implementation and further development of the strategy.

Policy development

6.14 A coordinated approach from within the NHS Executive and the Department of Health is required to handle the information issues associated with current and future government policy. It is vital that the implications of general policy development and related information issues are understood. The strategic requirements of the NHS for information, and the progress made in implementing this strategy, also need to be kept under review. A sharply focused Information Policy Unit is therefore needed within the NHS Executive.

'the Regional Offices of the NHS Executive will have a key role to play in making the strategy happen'

6.15 The Regional Offices of the NHS Executive will have a key role to play in making the strategy happen. They will act as an interface between the policy development function and the local NHS organisations. As well as actively supporting local NHS organisations in developing and delivering their Local Implementation Strategies they should also undertake a performance management function to monitor the achievements of local organisations against those plans and associated targets.

National programme management

- 6.16** There is already a significant IM&T agenda in the NHS to deliver the national strategy. Better national arrangements are required to build on existing work, and to support the actions identified in *Information for Health*. The areas where national products and standards need to be delivered for local implementation are:
- national technical infrastructure eg, NHS Clearing Service, *NHSnet*, NHS Number, Telecommunications, National web sites, NHS Central Register, core FHS systems, NHS Strategic Tracing Service
 - national clinical information management programme eg, Codes, Terms, Headings, Messaging, Clinical Record Management, Data Quality, Health Resource/Benefit Groups, Bench-marking, National Clinical Data Set Development, Security, Encryption, Caldicott report implementation, supporting the Security and Confidentiality Advisory Group
 - Electronic Patient Record development programme eg, for hospitals, primary and community care, supporting integrated care, *The new NHS* IT targets, telemedicine/telecare demonstrators, supplier liaison
 - education and training eg, the development and implementation of pre- and post-graduate training, and in-service continuing professional development
 - communications and coordination eg, coordination with policy development, coordination of better communications with the NHS, and coordination and support for a range of Advisory Groups.

‘current arrangements for national programme management have failed to win the confidence and support of the NHS ...’

- 6.17** Current arrangements for national programme management have failed to win the confidence and support of the NHS. A number of organisational options have been considered against the following criteria, namely they should be:
- credible within the NHS
 - able to achieve NHS involvement and ownership (clinical and managerial) of the IM&T agenda
 - a high-profile responsibility for supporting delivery of the strategy objectives in partnership with the NHS
 - clearly visible and accountable to Government
 - effectively tied into policy development.

NHS Information Authority (NHSIA)

- 6.18** The type of organisation best placed to deliver the products and services the NHS requires is a Special Health Authority, to be known as the NHS Information Authority (NHSIA). Its work will progress in a more open and accessible way in partnership with a wide range of NHS professionals, suppliers, academics and others.
- 6.19** It will be fully part of the NHS and focused on the real challenge of implementing the new strategy. It will be a single employer, incorporate statutory public accountability and have non-executive involvement – eg, from the commercial and academic sectors – to ensure access to a wide range of skills and experience.

The NHSIA will support an agenda that is critical to clinical professionals, Ministers and managers. As such it will be constantly at the centre of issues of continuing interest to this authoritative group of stakeholders. The Board of the NHSIA will have representation from both policy and the advisory arms of the new partnership arrangements and will have mechanisms for incorporating the perspectives of patients, carers and the public into its work.

- 6.20** The aim is to establish the new NHS Information Authority on a full statutory basis by April 1999. Up to April 1999 the current resources and work programme of IMG will be reviewed in detail and adjusted to align with the role envisaged for the NHSIA and a provisional organisational structure of the new body agreed. IMG will then be disbanded.
- 6.21** To ensure continuity and allow an orderly transition to the new arrangements, the current IMG work programme for 1998/99 will continue, taking as much account as is practicable of the new agenda set by the White and Green papers and this new information strategy.

Specific issues relating to NHSIA

'all national IM&T operational development (including responsibility for primary care IM&T) will fall within the remit of the NHSIA'

- 6.22** There are a number of clear statements that can be made regarding the role of the NHSIA, including:
- all national IM&T operational development (including responsibility for primary care IM&T) will fall within the remit of the NHSIA
 - FHS Exeter will change from a partial commercial trading organisation into a directly managed and funded part of the NHSIA, at the minimum cost necessary to support the functionality of the core FHS systems. An urgent task will be to coordinate agreement with Health Authorities on the specification for a replacement of the current Exeter system via a Public/Private Partnership procurement, reflecting the new role of Health Authorities
 - overall baseline costs of the former IMG elements of the new structure will be significantly lower than existing costs through a focus on fewer strategic projects and a detailed review of all current projects
 - the total annual running costs of the NHSIA will be contained within relevant current expenditure. Project expenditure will be zero based and agreed on an annual basis
 - the NHSIA will as a matter of policy disengage from all but a handful of strategically critical national projects. It will carefully target its own resources to complement and coordinate development work throughout the NHS making fullest possible use of the national communications infrastructure
 - the NHSIA will aim to be an organisation that enables the development and use of IM&T skills in the NHS through a policy of two-way skill transfer, funded secondments, sub-contracting and funding work in the field etc. This will ensure a better balance between use of in-house and external skills than at present. More use will be made of Regional Heads of Information to coordinate and lead national development work using their own regions for the fieldwork.

Performance management

- 6.23** There will be an important role in performance managing the work of the various stakeholders. In the past local organisations have found themselves hampered by delays in national projects. Because of the close interdependencies it is important that both local and national activities are closely managed, using accepted, formalised approaches such as project management techniques and post-project evaluations.
- 6.24** Regional Offices will have a key role in actively supporting local NHS organisations in their implementation plans. They will also need to be able to undertake a performance management function to monitor the progress of local organisations against the agreed Local Implementation Strategies and associated targets.
- 6.25** As well as the local activities, the NHS Executive Information Policy Unit will monitor the performance of the NHSIA to ensure that the targets agreed between the two parties are met and that national products required by local NHS organisations are delivered on time and to quality standards.

Actions

- IMG will be disbanded and new national partnership arrangements for information introduced.
- Existing advisory machinery will be completely revamped to ensure there is an effective mechanism in place.
- Central policy-making will be supported by an Information Policy Unit within the NHS Executive.
- In order to allow the Regional Offices to deliver their key role in the partnership, work will be carried out to ensure that they have the skills and capacity necessary to undertake these functions.
- Ensuring delivery of the national IM&T work programme to and for the NHS will become the responsibility of the NHS Information Authority, constituted as a Special Health Authority.
- The NHSIA will restrict its activities to those which can only be carried out nationally and will not take on any existing work that does not fully meet this criterion.
- The FHS Exeter Unit will be directly managed by the NHSIA, and a new specification for a replacement for the core Exeter system will be agreed with a view to procurement through a Public/Private Partnership.

Other national issues

Addressing procurement processes

‘to meet the challenging timescales a dramatic reduction is needed in the time taken to conclude the procurement process’

6.26 To meet the challenging timescales set out in this strategy a dramatic reduction is needed in the time taken to conclude the procurement process. The present process is designed to ensure that NHS organisations subject their requirements for new clinical systems to a rigorous business case. The procurement process will then maximise fitness for purpose and value for money. The experience of the NHS, however, is that the process takes far too long with considerable frustration and excessive costs for both the NHS and suppliers.

6.27 A major factor has been the number of levels of approval for relatively small investments – Health Authorities, NHS Executive Headquarters and Regional Offices. The Treasury has been involved in every information systems procurement with a capital cost over £1 million. This process is no longer tenable and must be simplified. The requirements in *The new NHS* for NHS Trusts to clear major investments with their purchasers, coupled with the normal business case process, offers a way of establishing a more efficient approval process within new limits set to refer only the very largest procurements for Treasury approval.

6.28 Procurement delays are not only caused by the approval process. Acquisition of new information technology whether on a modest or major scale is a specialist skill and the NHS needs to find ways of making available to the NHS staff the in-house skills and experience required for the process.



‘unrealistic aspirations in procuring clinical systems will inevitably end in delay, frustration and disappointment’

6.29 The term “fit for purpose” should not be taken to simply mean the procurement of anything that works but rather the procurement of a system that meets the fundamental information needs of the particular organisation concerned. As in the purchase of all goods and services, the purchaser’s ambition must be limited by what fundamental business processes need to be served, affordability and availability. Unrealistic aspirations in procuring clinical systems will inevitably end in delay, frustration and disappointment.

6.30 Many NHS organisations can demonstrate that the combination of realistic aspirations with an experienced and focused project management team does greatly speed the process.

Supplier relationships

'partnerships must be the norm, with long-term contracts and suppliers who are strategic partners allowed to make a profit'

- 6.31** Much of the past experience with suppliers has been confrontational but adversarial supplier management will not deliver the necessary results. Partnerships must be the norm, with long-term contracts and suppliers who are strategic partners allowed to make a profit.
- 6.32** As the NHS develops a more integrated approach to the procurement and implementation of information systems, suppliers need to respond by establishing consortia to offer a range of integrated products and services. This may lead to the development of more strategic partnership arrangements and help reduce the number of independent procurements as well as contributing to streamlining the procurement and implementation process.

National mandated processes for procurement

'... local freedom to procure the technology ... must not result in needless local "reinvention of wheels"'

- 6.33** The Government recognises the importance of ensuring widespread clinical "ownership" of information and in investing in clinical information systems. There is, however, a real concern to ensure that the local freedom to procure the technology necessary to deliver national information objectives does not result in needless local "reinvention of wheels". Nor should local freedom result in uneconomic, isolated, over-ambitious or poorly managed projects that fail to deliver the benefits to the clinical community.
- 6.34** In the context of the past slower pace and level of investment, considerable progress has been made recently in simplifying procurement processes. However, for this strategy to be delivered all parts of the NHS will be engaged in the acquisition of major information systems over the next seven years.
- 6.35** An urgent review is therefore required to develop a national mandated process for the local procurement of "fit for purpose" clinical systems to achieve the vision for introducing NHS-wide EPRs and EHRs within the lifetime of this strategy. The aim is to channel local energies effectively, defining the limits for local discretion in the process. The review will speed up implementation by identifying paths for procurement and implementation, and clearly defining the limits of local discretion. This further work should not impede the progress of any existing national or local projects and in any event be concluded before the end of March 1999.
- 6.36** The review and subsequent process will cover:
- how to eliminate any unnecessary or duplicated process at local level eg, development of common core contractual documentation
 - how best to move towards integrated local solutions for the local health community
 - how best to organise and make use of project management skills, taking account of NHS and supplier project management capacity
 - how best to involve the private sector suppliers in project and service management, and the provision of intellectual services

- what will be the optimum scale and configuration for future IM&T investments in both primary and acute care
- how to migrate from the existing funding arrangements for primary care IT
- the case for collective procurements in support of collaborative strategies
- the case to extend and develop an appropriate form of clinical system and supplier accreditation
- the role of the Private Finance Initiative and Private/Public Partnership schemes – the strategy assumes the trend towards providing systems and services based on PFI arrangements, as opposed to the outright purchase of equipment, will continue.

6.37 Achieving accelerated progress will involve a more active role on the part of the centre, and in particular the Regional Offices, to provide constructive support and guidance to local organisations and ensure that plans are prepared and implementation is progressed at an appropriate pace.

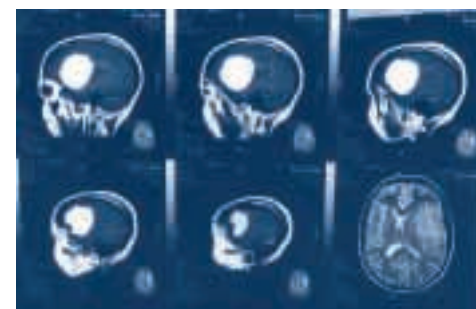
Actions

- With immediate effect, accredited Regional Offices will be able to approve IM&T business cases of value up to £20m whole life costs.
- There will be a review of the thresholds for approval of local IM&T business cases at NHS Trust level with a view to raising them in due course.
- Work will be undertaken to develop further guidance for the NHS in relation to the procurement processes.

Information technology research and evaluation

6.38 The main thrust of the strategy is on implementation and benefits realisation, but research and evaluation of information and communications systems is a distinct and fundamental objective. It must focus on the practical benefits, affordability and deliverability of work at the leading edge of service-based IT use.

6.39 Areas for research include: expert systems; multimedia applications; telematic supported outreach services; improving the user interface; involving the patient in managing health records; independent information “banking” systems; organisational development, web-based record structures; barriers to the development of professionals’ skills; improving data quality; the consequence for professionals of highly informed, computer-literate patients etc. Suppliers, European Standards Bodies and the wider international community are undertaking work in these areas, and this knowledge must be kept under review and experiences shared.



'... a carefully directed centrally funded research initiative will be introduced'

- 6.40** In the light of this, a carefully directed centrally funded research initiative will be introduced. This will form a part of the Department of Health's Research and Development Division's Policy Research Programme and will be coordinated with research funded through the NHS R&D Programme with a provisional allocation in excess of £2m.
- 6.41** An open competition for research will follow publication of *Information for Health*. The primary aim is to fund a range of research and evaluation focusing on the provision of high quality scientific evidence and identifying the ways in which information and communications technology can be implemented to optimal benefit. This will include a call for studies relating to how the application of appropriate technology can improve information resources of the various stakeholders, and some of the processes of healthcare delivery. The research initiative will also fund studies on the issues surrounding the public and professional acceptability of including new technology in the healthcare process.
- 6.42** Other major areas to be covered in the first phase of this research initiative will include:
- investigations on the uses of information and communications technology in providing information: to patients and carers, to the public, and to the profession for continuing medical education
 - studies of the uses of information and communications technology in support of clinical and managerial decision making and to improve healthcare delivery
 - studies of the uses of information and communications technology in improving cross-boundary working
 - studies of the criteria for the successful implementation of technology
 - studies on how to monitor and maintain data quality, and on how to maintain data confidentiality.
- 6.43** By fostering research along these lines, it is also intended to encourage an increasing contribution from the academic community, both in providing methodological advances in the field, and through active involvement in research and evaluation of value to the NHS.

Actions

- A centrally funded research programme (in excess of £2 million) will be established specifically to support this strategy and will be coordinated with existing and future research in this area funded through the NHS Executive's R&D Programme.

Education and professional development

- 6.44** On a national scale developing a professional culture with informatics skills as a core professional requirement must be a major priority for all stages of clinical education. Much of the current behaviour and prevailing culture for information use is fed by pre-qualification education. There have been significant changes in this area and future generations of healthcare professionals will be equipped with an array of IT skills leading to high expectations of the service. Service managers need to take note and ensure that these skills are supported rather than frustrated in practice. The work to supplement these skills with a deeper understanding and application of information management in clinical practice needs to continue to achieve lasting behavioural and cultural change.
- 6.45** The pace at which information technology is rolling over society, the targets for service and health improvement set by Government and the targets in this strategy, do not allow the NHS to wait for the arrival of ready-made informatics/IT literate professionals some time in the future. The NHS must equip the existing generation of professionals to cope with this agenda and this is part of the change management challenge described earlier.
- 6.46** Together with the professional education community the NHS Executive's Enabling People Programme has made positive progress in relation to health informatics learning for the different stages of clinical education. An outline framework has been developed with the potential to form the basis for a multi-professional approach to using health informatics for lifelong learning. The first draft of this framework has received a significant level of support from a wide range of professional organisations, with a commitment to develop and implement health informatics learning programmes as part of the normal process of clinical education. The delivery of this strategy will require significant progress in the field of continuing professional development and lifelong learning.
- 6.47** Education commissioners should be aware of and act on the requirements identified in national priorities and planning guidance (EL(97)58) for education and training. This advice describes the responsibility of education commissioners for ensuring the development of information skills in the NHS. Further help is available through a number of publications, for example, the joint English National Board/Enabling People education tool *Information for Caring*.
- 6.48** The provision of adequate local education, training and development opportunities is also a key issue. Training strategies need to focus on the long-term development of an information culture, and not – as in the past – on short-term training designed simply to get people using systems. Learning programmes need to be sustainable in the medium to long term and fully integrated and coordinated with organisational changes and mainstream training strategies. It will be vital to train staff to manage information effectively.
- 6.49** Some of the learning needs may be indicative of fundamental changes in behaviour eg, embracing a much more specific approach to the information that is recorded and communicated between health records. These will be taken into account within

'the NHS must equip the existing generation of professionals with information and IT skills'

local programmes. Likely areas for learning include: managing records, clinical coding and terming, the use of software to produce meaningful and presentable information and the communication of “fit for purpose” information between professionals and organisations. Local health organisations will require notice of changes in formal clinical education programmes and work much more closely with education providers to articulate clearly their needs and ensure the best use of resources. Learning opportunities to support behavioural change need to be made available.

‘national initiatives in professional training and development in IM&T skills for clinicians will be commissioned’

- 6.50** The NHSIA will need to work with those responsible for clinical education to commission national initiatives in the area of professional training and development in IM&T skills and to develop products that will be of practical assistance in the field.

Actions

- A specific national IM&T training and education strategy will be developed by March 1999 and agreed with the education sub-committee of the NHS Executive Board for subsequent implementation within the NHS.
- National work to promote and implement health informatics as a theme for lifelong learning in partnership/conjunction with the national professional bodies should be continued and intensified.
- The multi-professional approach envisaged in *Learning to Manage Information – A Theme for Clinical Education* should be developed and implemented.
- There should be national coordination of the planning and priorities guidance for education and training with the information strategy implementation plan, with specific responsibilities of local organisations identified in the documentation.
- Education consortia should state how they will commission/provide and manage learning opportunities required to support the information strategy and its implementation year by year.

Action at the local level

‘it is for local NHS organisations in partnership with the clinical community to deliver the best solutions’

- 6.51** Establishing clarity of purpose and a consensus on the objectives is the fundamental role of the centre. However, the Government believes it is for local NHS organisations to develop and implement in partnership with the clinical community the particular solutions that best deliver the objectives.

Management commitment

- 6.52 Progress in the development of information strategies in the NHS that support core business and that properly exploit available technology has been slow in most places for many reasons explored earlier.
- 6.53 As a consequence, the service is generally not well placed to make the transition to the core management philosophy signalled in *The new NHS* where the focus will be on service quality and the effectiveness of resource use. A dramatic move forward in improving service quality or effectiveness requires a radical improvement in the quality of information available to – and intelligently used by – the public, patients, clinicians and managers.
- 6.54 Information issues are not clearly understood in the NHS and many staff feel personally threatened by the challenge of new technology. The development of the information strategy and the introduction of new technology into an organisation as conservative and traditional as the NHS is a change management challenge of the highest order. Where the NHS has failed in this area in the past it has done so because the management of the change was weak.
- 6.55 Information must be at the core of any organisation's key management agenda and the potential benefits offered by the new information in implementing the key NHS priorities should be irresistible to Chief Executives.
- 6.56 The measures recommended in this strategy provide a major programme for local action, but given the complexity of the issues and the pace at which improvements need to be made the strategy will fail without the personal interest and leadership of all Chief Executives.

'where the NHS has failed in this area in the past it has done so because the management of the change was weak'

Supporting the clinical improvement agenda

- 6.57 In many NHS organisations the "Information Department" continues to be regarded principally as the producer of information to support local financial management and ensure compliance with national (bottom line) information requirements (CMDS, Körner, HRGs etc). The fact that local NHS information departments have their centre of gravity in the management community is often reinforced visibly by their formal accountability to Finance Directors.
- 6.58 It is of course a matter for individual NHS organisations to determine where formal management and Board level responsibility for information services is best placed. At the very least Boards and Authorities should put a formal arrangement in place that ensures the priorities of the local health information services are fully and effectively influenced by the wider clinical community and support the core clinical and health improvement agenda of the NHS.

Local coordination

- 6.59** Clinical communication is essential to seamless care and failure to coordinate information strategy and action will produce serious problems for clinicians and patients.
- 6.60** The previous absence of clear national direction on achieving local information strategy objectives has resulted in a local situation where information strategy has been pursued in the main as an agenda for individual organisations. The position was not helped by the internal market central to the 1991 reforms of the NHS.
- 6.61** There is now a real opportunity for groupings of Health Authorities, NHS Trusts and general practitioners who share responsibility for the same or overlapping populations to collaborate in developing a shared Local Implementation Strategy with agreed objectives, priorities and phased investment programme.
- 6.62** Local collaboration ensures investment plans take account of the future configuration of services particularly where there may be rationalisation or partnerships between neighbouring NHS Trusts. There will also be major opportunities to benefit from economies of scale in both procurement and project costs for consortia procurements.
- 6.63** *The new NHS* requires Local Health Improvement Programmes which provide the basis for collaborative information implementation strategies. There will not always be an entirely neat and tidy grouping for joint work on information but this should not exclude obvious partnerships.
- 6.64** *The new NHS* actually requires that “the Health Authority will coordinate information and information technology plans across primary care, community health services and secondary care”.
- 6.65** Health Authority responsibility for ensuring local IM&T coordination does not compromise the responsibility of, or opportunity for, managerially independent organisations to meet their internal information needs within the context of the local joint plan. The new responsibility of Health Authorities to coordinate local plans does not imply that they will always lead the process. The Health Authority role is to coordinate plans and “hold the ring” to ensure major IT investment locally is consistent with local needs – the work can be led in any way that the local partners agree (eg, by a local NHS Trust, by consultants etc). The Health Authority will also collaborate with Local Authorities and others to provide information for the implementation of *Our Healthier Nation*.
- 6.66** Some parts of the country may be particularly well placed to make rapid progress – in some areas there are already community-wide groups looking at their joint information systems and technology agenda. In other areas, such as Health Action Zones, the establishment multi-agency planning and service delivery arrangements provides a strong impetus for early action.

‘there is now a real opportunity for groupings of HAs, NHS Trusts and GPs ... to collaborate in developing a shared Local Implementation Strategy’

Need for local action

- 6.67** This strategy will only deliver the anticipated benefits if its recommendations are fully implemented locally. *The new NHS* gives a clear direction of travel – collaboration with partners to deliver better quality services more efficiently – and has to be supported by better use of information and IT.

‘NHS organisations should plan to implement their own local information systems to achieve the vision set out in Information for Health by 2005’

- 6.68** Detailed guidance will be issued shortly after publication of this strategy in the form of a Health Service Circular (HSC). Individual Health Authorities will be tasked with ensuring that the NHS in their local area develops and agrees a Local Implementation Strategy (LIS) for the overall national strategy. The LIS should reflect local priorities and starting points in terms of information systems and technology, and illustrate how the NHS organisations plan to implement their own local information systems to achieve the vision set out in *Information for Health* by 2005.

Contents of the local implementation strategy

- 6.69** The LIS should include reference to what is to be done, the process by which it is developed and subsequently implemented and reviewed, and who is involved in terms of the local partnerships. An indication of the likely contexts of a LIS is included in the Annex.
- 6.70** Local implementation strategies will need to recognise and be sensitive to the requirements of those NHS Trusts which serve substantial populations outside of their “host” Health Authority.
- 6.71** Once developed – and the forthcoming Health Service Circular will confirm the timetable – Local Implementation Strategies should be submitted for agreement to Regional Offices as one of the underlying delivery plans required to support the local Health Improvement Programme. They will then form part of the normal performance management process, and progress against these plans will be kept under annual review.

Actions

- Health Authorities, NHS Trusts and GPs who share a responsibility for the care of common or overlapping populations will collaborate in the development of a joint Local Implementation Strategy with agreed objectives, timescales and investment requirements.
- Chief Executives throughout the NHS will provide effective personal leadership in the development and delivery of Local Implementation Strategies.
- NHS Trust Boards and Health Authorities will need to assess the adequacy of the specialist IM&T staff resources available to support implementation of this strategy.
- NHS Trust Boards and Health Authorities will see that a formal arrangement is in place that ensures the priorities of the local Health Informatics Service are fully and effectively influenced by the wider clinical community and support the core clinical and health improvement agenda of the NHS.
- Initial Local Implementation Strategies, with costed implementation plans, will be submitted to Regional Offices for agreement by March 1999.
- Regional Offices will pay particular regard to the extent to which individual business cases reflect logical local partnership arrangements and achieve appropriate levels of critical mass both in regard to contract value and project management resources.

Local education, training and culture change

- 6.72** The impression of failure connected to IM&T projects in the NHS coupled with clinicians cynicism about distorted management information priorities and fear of new technology presents a potentially major problem for the NHS in developing and implementing information strategies.
- 6.73** Both managers and clinicians must act to deliver the new agenda. Clinical professions have a major part to play in giving more prominence to information issues; for example, identifying good practice and working with other professions over the transfer of information for clinical care.
- 6.74** There is a long and growing list of successful initiatives around the country to provide a body of evidence that implementing a sound information strategy with appropriate technology does make a practical contribution to the day-to-day work



of NHS clinicians and yield real improvements in services and outcomes for patients.

'the NHS should make more effort to spread news of success and good practice'

- 6.75** The actual experience of others is always more informative and inspiring than theories and strategies and the NHS should make more effort to spread news of success and good practice well beyond the currently limited focus on a handful of demonstrator sites. Again *NHSnet* and the Internet will provide an effective mechanism for an easily accessed electronic directory and description of the scores of interesting and successful projects around the country (eg, the IM&T investment web site).

The change management agenda

- 6.76** Information technology is only one part of the change equation and successful projects are often dependent on other factors. These include: the recognition of IM&T as integral to the organisational strategy; clinical leadership; commitment to joint working; and a willingness to reassess current working practices. It is important to develop a local culture that is change focused and able to take advantage of developing technology.

'the technological advances ... should enable patients to expect an integrated, clinically effective approach to care'

- 6.77** However, *The new NHS* calls for consideration of a wider change agenda. The technological advances must not merely automate existing healthcare processes, but should enable changes to the organisation and delivery of care, so that patients can expect an integrated, clinically effective approach to care from the various professionals and agencies who need to be involved in their care. Improved healthcare processes should be the starting point for determining information requirements and technical solutions. To achieve effective change, this also means considering the roles and responsibilities of the various professionals and support staff involved in delivering healthcare to patients and in the management of information. The new information agenda must, therefore, be fully integrated into local service and organisational development programmes, including multi-agency development of care programmes.
- 6.78** Delivering the significant improvements needed to deliver integrated patient care will require coordinated developments in a number of areas.
- 6.79** For example, simply providing the technology to allow GPs to make direct hospital outpatients appointments for their patients will be insufficient to achieve the required outcome. There will need to be agreement between hospital consultants and GPs about the type and length of an appointment for particular investigations, the clinical urgency for the patient to be seen at the hospital and how appointments are confirmed. It will also be necessary to determine who makes and confirms appointments and assess the impact on the working practices of clinicians and secretaries.
- 6.80** The same approach needs to be applied when considering more complex changes, such as the introduction of care pathways to improve patient care where several agencies have to deliver services to a patient.

- 6.81** Effective support of the integrated care process requires a commitment to a comprehensive review of relevant clinical and business processes and associated roles and responsibilities, coupled with radical approaches to developing the use of information and IT.

Actions

- As a matter of course the NHS will be expected to contribute to, and demonstrate learning from, the NHS-wide experience on the use of information technology to provide practical service benefits.
- Local NHS organisations must consider the wider change management agenda and ensure they have adequate organisational and personal development programmes in place to plan and deliver the change agenda.

Developing skills and resources

- 6.82** Successful implementation of the information strategy relies upon specialist informatics, technical, change management and project management skills at the local level. These skills will become increasingly scarce and expensive and it is inevitable that the benefits of economies of scale will have to be maximised whether support is provided in-house or externally.
- 6.83** A logical consequence of the move to local collaboration in the development of implementation strategies will be the formal or informal pooling of specialist IM&T personnel. This proposal should equally apply for any clinical staff specifically employed to support the informatics and audit work for local clinical governance, given the value of collaborative work in this area across primary and secondary care.
- 6.84** The creation of larger specialist Health Informatics Services to serve a combination of NHS organisations will ensure the full and appropriate employment of the different skills required and allow some scope to offer greater personal rewards to the most senior and experienced specialists. These services will be of a very different nature from most of the existing IT departments as they need a broader clinical informatics and cross-organisational remit. To address important skill and resource gaps, this pooling approach may benefit by some outsourcing from the private sector, thereby complementing NHS skills.
- 6.85** Such services also provide an opportunity to establish a new purpose and a new “image” for the traditional IM&T specialists and to discard the perception that they are principally “providers of management information”. In the new Health Informatics Services IM&T specialists will work alongside clinicians, clinical informaticians, public health experts, epidemiologists, clinical audit staff, librarians and others who contribute towards meeting local health information needs.

‘Health Informatics Services, serving a combination of NHS organisations, will ensure the full range of skills required’

- 6.86** As well as making more efficient use of existing IM&T specialists, the NHS will need to increase its current investment in specialist IM&T and clinical informatics personnel (whether in-house or outsourced) both to deliver and then exploit the investments in new technology required to deliver this strategy.
- 6.87** Because of the need to ensure local capacity to cope with change, developing local health informatics skills will be an early task for local organisations and a specific area in which the 1999/2000 Modernisation Fund monies can be used.
- 6.88** At a national level, work will be undertaken to provide guidance and support for the NHS in acquiring and developing these health informatics skills.
- 6.89** As part of the process of agreeing Local Implementation Strategies – which will be required to access the Modernisation Fund monies – Regional Offices will form an assessment of the capacity of local Health Informatics Services to deliver the plans set out within the timescales proposed.

Actions

- IM&T resources and skills employed by Health Authorities and NHS Trusts should be pooled to establish local Health Informatics Services.
- Resources from the Modernisation Fund will be made available locally to support the development of the health informatics capacity needed to implement the strategy.
- National work will be undertaken to identify the nature of the health informatics skills required, and take steps to meet any identified shortfalls such as agreeing standards, qualifications and training courses, and in facilitating the development of local informatics services.

National Strategy

Partnership arrangements

NHS Executive

Information Policy Unit
Regional Offices

Local organisations

- NHS Trusts
- Primary & Community Care
- Health Authorities
- Social Care

NHS
Information Authority

- Professional organisations
- Health management
- Suppliers
- Academic institutions

7

Implementation programme

Introduction

- 7.1** Over the next few months it is essential to establish the new national and local partnership arrangements, to begin the detailed dialogue with key stakeholders vital to meeting the critical shorter-term targets and to put more flesh on the bones of a detailed implementation plan for the medium and longer-term targets scheduled between 2000 and 2005.
- 7.2** Detailed guidance on implementation is being considered and will be issued shortly. In particular, this will address the question of roles and responsibilities, required deliverables, and strategy implementation monitoring mechanisms. This chapter sets the scene for this guidance by discussing:
- resources
 - local implementation timescales.

Resources

- 7.3** An organisation as large, as complex and as important to the public as the NHS cannot meet its obligations to provide the very best in care and services if it has not invested adequately in technology. Investment in new technology is needed to support the day-to-day clinical information needs and to provide the robust data essential to the effective management of £40 billion of public money.
- 7.4** Information technology must be regarded as a basic overhead cost for an organisation like the NHS, not as a novel or an unaffordable development. When NHS organisations consider that financing the IT infrastructure, necessary to deliver operational and strategic information needs, is a basic organisational need then entirely different priorities will emerge.
- 7.5** The NHS cannot afford not to make the investments necessary to deliver this strategy.

- 7.6** The Government recognises that the information technology investment required throughout the NHS to deliver this strategy fully will be considerable. It further accepts the need to identify some additional resources to support the process. For their part, NHS organisations must accept the opportunity that exists to support a considerable proportion of the new investment from:
- the current costs of redundant legacy systems
 - exploiting the considerable opportunities to improve existing processes as a consequence of major investment in new technology.
- 7.7** The settlement for the NHS announced as part of the Government's Comprehensive Spending Review included a £5bn Modernisation Fund. The Modernisation Fund will help to implement the new national information strategy, and agreeing the processes associated with the use of these funds will be one of the early actions following publication of the strategy.
- 7.8** To fund properly the implementation of this strategy requires a combination of adequate investment from existing resources coupled with additional support from the Modernisation Fund.
- 7.9** Over the lifetime of the strategy, the Government will support implementation of *Information for Health* with an investment in excess of one billion pounds.

'over the lifetime of the strategy, the Government will support implementation of Information for Health with an investment in excess of one billion pounds'

Local implementation timescales

- 7.10** *The new NHS* introduced a ten-year government programme to modernise the NHS. The earliest possible full implementation of a comprehensive information strategy, supported with adequate investment in new information technology, is seen as an essential prerequisite for modernisation.
- 7.11** The Government recognises that the radical programme for the NHS set out in this strategy needs to be implemented at a realistic pace, both in relation to the flow of resources and the sheer scale and complexity of the technical, cultural and management challenge which the strategy represents. Balancing urgency and ambition with practicality suggests a programme that will stretch to the middle of the next decade in three major phases.

1998 to 2000

The period from now to the year 2000 will be taken up in delivering a number of strategically critical components of the new strategy, some of which are already established in NHS business plans or are specific short-term targets in *The new NHS*.

- Ensuring the NHS copes with the millennium (Year 2000) problem
- Developing initial costed Local Implementation Strategies (and agreeing them with Regional Offices)
- Completion of essential infrastructure
- Connecting all computerised GP practices to *NHSnet*
- Offering *NHS Direct* services to the whole population
- Completing the national NHS email project
- Establishing local Health Informatics Services
- Completion of the cancer information strategy
- Beacon EHR sites complete plans

2000 to 2002

In the second phase of implementation, substantial progress will be seen in delivering the Electronic Patient Record and Electronic Health Record, the incorporation of telemedicine proposals in local Health Improvement Programmes and the achievement of other specific key targets as follows:

- 35% of all acute hospitals to have implemented a Level 3 EPR¹
- Substantial progress in implementing integrated primary care and community EPRs in 25% of Health Authorities
- Use of *NHSnet* for appointment booking, referrals, radiology and laboratory requests/results in all parts of the country
- Community prescribing with electronic links to GPs and the Prescription Pricing Authority
- Telemedicine and telecare options considered routinely in all Health Improvement Programmes
- A National Electronic Library for Health accessible through local intranets in all NHS organisations
- Information strategies as appropriate to underpin completed National Service Frameworks
- Beacon EHR sites have an initial first generation EHR in operation.

¹ This level of EPR will require each acute hospital to have an integrated patient master index, patient administration and departmental systems, plus electronic clinical orders, results reporting, prescribing and multi-professional care pathways.

By 2005

The final phase of implementation will see the completion of the work programme, with comprehensive electronic patient and health records available throughout the NHS to support the delivery of care.

- Full implementation at primary care level of first generation person-based Electronic Health Records
- All acute hospitals with Level 3 EPRs
- The electronic transfer of patient records between GPs
- 24 hour emergency care access to patient records

National Implementation Programme

7.12 Much of the action required at national level is a prerequisite to action at the local level and must be undertaken in the early phases of implementation. A considerable amount of this work will need to be completed over the next 12 months if the pace of implementation in the field is not to be compromised.

7.13 The timescale for work to be undertaken nationally is as follows:

National priorities and milestones

Announce full details of new business case thresholds	Oct 98
Publish strategy implementation guidance including guidance on the contents of the initial Local Implementation Strategy	Nov 98
Agree the nature and composition of the national partnership process	Dec 98
Agree detailed funding arrangements for national infrastructure	Jan 99
Establish the new NHS Executive Information Policy Unit/operate in shadow mode	Jan 99
Define the core Regional Office review process including national template of deliverables	Mar 99
Appoint the Chair and CEO for the SHA	Apr 99
Review code of connection for <i>NHSnet</i>	Apr 99
Formally establish the SHA/operate in shadow mode	Apr 99
Review implementation plan for phases 2 & 3	Oct 99

Annex

Local Implementation Strategies

Details about the required content of a Local Implementation Strategy (LIS) will be included in a forthcoming HSC.

As an illustration of the contents of a LIS it should address:

- Local Information Strategy implementation priorities in relation to local health and healthcare priorities
- details of the existing systems and services infrastructure within the community
- plans to achieve the specific outcomes set out in *Information for Health*
- plans for the development of systems in acute hospitals, in primary care and in community and mental health sectors
- plans for the development of systems to support both the Health Authority and Primary Care Groups in their commissioning role as they develop over the next five years
- plans for the use of information systems in support of clinical governance across all organisations within the local area
- reference to the interface with social services and other agencies involved in improving health and in the planning and delivery of healthcare
- statements about the local policy and plans to improve the provision of information to patients and the public
- plans for improving and maintaining levels of data quality within the local community including plans for the implementation of data accreditation and development of local data quality agreements.

The LIS will also form the basis for and will include:

- a set of milestones and objectives for implementation of the LIS
- the methods for managing and monitoring local implementation of the LIS
- a plan to periodically revisit and review the LIS in the light of local developments
- a statement about the levels and methods of resourcing that will be required to implement the LIS including organisation, structure and roles and responsibilities
- statements about the benefits realisation plan for the LIS as a whole, with specific reference to change management processes and the local training and education requirements

- a local information systems investment plan setting out in broad terms the order for implementation and the outline level of investments needed to support that plan
- statements about both the short-term and long-term funding requirements to support the investment plan
- statements about those aspects of the investment plan which will be likely to require the development and formal approval of business cases in line with existing regulations
- statements defining local methods of agreement and approval and the relationship with the local Health Improvement Programme development process.

Glossary

Caldicott

Review led by Dame Fiona Caldicott into the use of patient-identifiable information with recommendations on appropriate safeguards to govern access to and storage of such information.

Clinical Governance

A national framework through which NHS organisations are accountable for continuously improving the quality and clinical effectiveness of their services.

Clinical Systems Group

Jointly chaired by the Chief Medical Officer and the Chief Nursing Officer, the Clinical Systems Group advises the NHS Executive and the Department of Health on strategy issues concerning the delivery of efficient and effective clinical services. It is particularly concerned with the ability of the NHS to exploit the potential of information management and technology.

Clinicians

Those directly involved in the care and treatment of patients, including doctors, dentists, nurses, midwives, health visitors, pharmacists, opticians, orthoptists, chiropodists, radiographers, physiotherapists, dietitians, occupational therapists, medical laboratory scientific officers, orthotists and prosthetists, therapists, speech and language therapists, and all other healthcare professionals.

Community NHS Trusts

The NHS organisations that provide community-based services chiefly to elderly people, children and people with disabilities. Includes district nurses, health visitors, physiotherapists, occupational therapist, chiropodists.

Community Minimum Data Set (Community MDS)

A developing information standard to record healthcare activity in the community.

Contract Minimum Data Set (CMDS)

Nationally defined information standard which sets the framework for NHS Trusts to report on levels of service activity, mainly in the acute sector.

Data Accreditation Process

A systematic methodology developed in the NHS for carrying out internal reviews of the quality of data management and data outputs against clear criteria, incorporating NHS standards and recognised good practice. The achievement of standards can then be compared by external audit.

Epidemiological and Mortality Data

Health information collected by Health Authorities to allow analysis of trends in causes of death and the pattern of illnesses.

Electronic Health Record (EHR)

The term EHR is used to describe the concept of a longitudinal record of patient's health and healthcare – cradle to grave. It combines both the information about patient contacts with primary health care as well as subsets of information associated with the episodic elements of care held in EPRs.

Electronic Patient Record (EPR)

A record containing a patient's personal details (name, date of birth etc), their diagnosis or condition, and details about the treatment/assessments undertaken by a clinician. Typically covers the episodic care provided mainly by one institution.

EPR Development Programme

A national programme of work to coordinate central support for the development of EPRs and EHRs and associated technology. It also facilitates the sharing of experience in the area within the NHS.

Finished Consultant Episode (FCE)

A term used for contracting purposes to describe the treatment/care of a hospital inpatient under the care of a consultant.

FHS Exeter Unit

Responsible for the development and support of the Exeter Computer System which is used by Health Authorities for maintaining GP lists, processing service payments, and call and recall systems.

Green Papers

Consultation papers issued by the Government providing information on current issues facing the Government and options for addressing them.

Health Action Zone (HAZ)

Designated areas where the Health Authority works in partnership with other local agencies, to specifically target local health needs.

Health Authority

Within *The new NHS* the Health Authority has the following roles and responsibilities:

- assessing the health needs of the local population
- drawing up a strategy for meeting those needs in the form of a Health Improvement Programme
- deciding on the range and location of healthcare services for the Health Authority's residents
- determining local targets and standards
- supporting the development of Primary Care Groups (PCGs), allocating resources to PCGs and holding PCGs to account.

Health Benefit Groups (HBG)

A method of linking health needs with service delivery and the expected health benefit to assist in health needs assessment and planning service delivery.

Health Improvement Programme

An action programme to improve health and healthcare locally and led by the Health Authority. It will involve NHS Trusts, Primary Care Groups, other primary care professionals, working in partnership with the local authority and engaging other local interests.

Health Information Service

The Health Information Service (HIS) is a national information service based on a freephone helpline. The helpline is accessible from anywhere in the UK and the caller is referred to a local provider of that service

Health Professional

See *Clinician*.

Health Service Circular (HSC)

Formal method of communication between the NHS Executive and Health Authorities, NHS Trusts and others working in the NHS.

Healthcare Resource Groups (HRG)

A way of grouping the treatment of patients to allow analysis of the appropriateness of care, efficiency and effectiveness of care. Based on clinically meaningful hospital inpatient episodes and the level of resources.

Information Management Group (IMG)

The NHS Executive department that currently sets and monitors NHS IM&T policy.

Körner Data

The basic NHS data requirements devised by the Körner working party to record NHS service activity.

Local Authority

The body that governs local services such as education, housing and social services.

MIQUEST

A software package designed to extract anonymised health data from GP systems, with the permission of the GP.

National Clinical Information Programme

National initiative to coordinate and develop work on clinical information, including Codes, Terms, Headings, Messaging, Clinical Record Management, Education and Professional Development, Data Quality, and the Security and Confidentiality Advisory Group.

National Health Survey of England

A national survey to provide the Department of Health with information about the health status of the national population.

National Institute for Clinical Excellence (NICE)

A new Special Health Authority to be established to promote clinical best practice.

National Framework for Assessing Performance (NFAP)

The National Framework for Assessing Performance is designed to give a rounded picture of NHS performance and will cover six areas: health improvement; fair access to services; effective delivery of appropriate healthcare; efficiency; patient/carer experience; and health outcomes of NHS care.

National Service Frameworks

Evidence-based standards setting out what patients can expect to receive from the NHS in major care areas or disease groups.

National Technical Infrastructure

Encompasses a number of components that reflect national IM&T policy. For example: NHS Number, NHS Central Register, *NHSnet*, standard clinical codes, standards for messaging and a framework for security and confidentiality.

NHS Strategic Tracing Service

Service provided to NHS organisations to enable them to obtain an NHS Number for individual patients.

Needs Assessment

The process by which a Health Authority uses information to judge the health of its population and then determine what services should be locally provided.

NHS Central Register

A central database for all NHS patients. Used to monitor changes when patients move from one GP to another, and flag populations for authorised health research purposes.

NHS Clearing Service (NWCS)

A national service for ensuring that NHS contract minimum data sets are transferred to those who need them quickly and efficiently (avoiding duplication) and to support production of nationally required statistics on NHS activity.

NHS Direct

Nurse-led telephone service to the public, currently being piloted, providing advice on health and health services.

NHS Executive

The NHS Executive is part of the Department of Health, with offices in London and Leeds and eight Regional Offices across the country. It supports Ministers and provides leadership and a range of central management functions to the NHS.

NHS Number

A unique number that identifies a patient. Everyone has been allocated a number.

NHS Information Authority (NHSIA)

The new Special Health Authority that will replace IMG and lead the implementation of *Information for Health*.

NHSnet

A communications network designed to support electronic communications between NHS users quickly and securely.

NHS Trusts

Statutory public bodies providing NHS hospital and community health care.

OPCS-4

Coding system used to record procedures carried out during delivery of healthcare.

Outcome Indicators

Measurements of the success of clinical treatment/intervention in terms of the impact on the health of the individual.

Primary Care Act Pilots (PCAPS)

Projects testing out new arrangements for the delivery of primary care.

Primary Care

Family health services provided by a range of practitioners including family doctors (GPs), community nurses, dentists, pharmacists, optometrists and ophthalmic medical practitioners.

Primary Care Groups (PCG)

New organisations announced in *The new NHS* which bring together family doctors, community nurses and other interests. PCGs will have the opportunity to become Primary Care Trusts.

Primary Care Records

An electronic record to replace the current lifelong paper record kept by GPs for each patient which may be used by other authorised members of the primary health care team.

Regional Head of Information (RHI)

Senior manager based at the NHS Executive Regional Office responsible for coordination of IM&T activity across their NHS Region.

Requirements for Accreditation

A set of standards applying to GP systems.

Secondary Care

Specialist care, typically provided in a hospital setting or following referral from a primary or community health professional.

SMTP

SMTP is the Simple Mail Transfer Protocol, a communications protocol designed to transfer mail reliably and efficiently across networks such as the Internet.

SNOMED

SNOMED is the Systematized Nomenclature of Human and Veterinary Medicine. It is a comprehensive, multiaxial nomenclature classification work created for the indexing of the entire medical record, including signs and symptoms, diagnoses, and procedures.

Special Health Authority (SHA)

Health Authorities with unique national or supra-regional functions which cannot be effectively undertaken by other kinds of NHS bodies (for example, the Prescription Pricing Authority).

Standards Enforcement in Procurement (STEP)

A methodology used to ensure the procurement of systems in line with agreed national standards.

Summary Personal Health Record

A short version of the primary care record containing information critical to the professions involved in caring for a patient.

Telemedicine/Telecare

Any healthcare related activity (including diagnosis, advice, treatment and monitoring) that normally involves a professional and a patient (or one professional and another) who are separated in space (and possibly also in time) and is facilitated through the use of information and communications technologies. Telemedicine is usually delivered in a hospital clinic or surgery, while telecare is delivered in the patient's home.

White Papers

The new NHS Modern • Dependable

Command Paper 3807, published in December 1997. Sets out the Government's programme for the modernisation of the NHS.

X.400

X.400 is the official international messaging/electronic email standard specified by the ITU-TS (International Telecommunications Union – Telecommunication Standard Sector). X.400 is a standard for email and electronic messaging, though less common than the more prevalent de facto email protocol, SMTP.



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