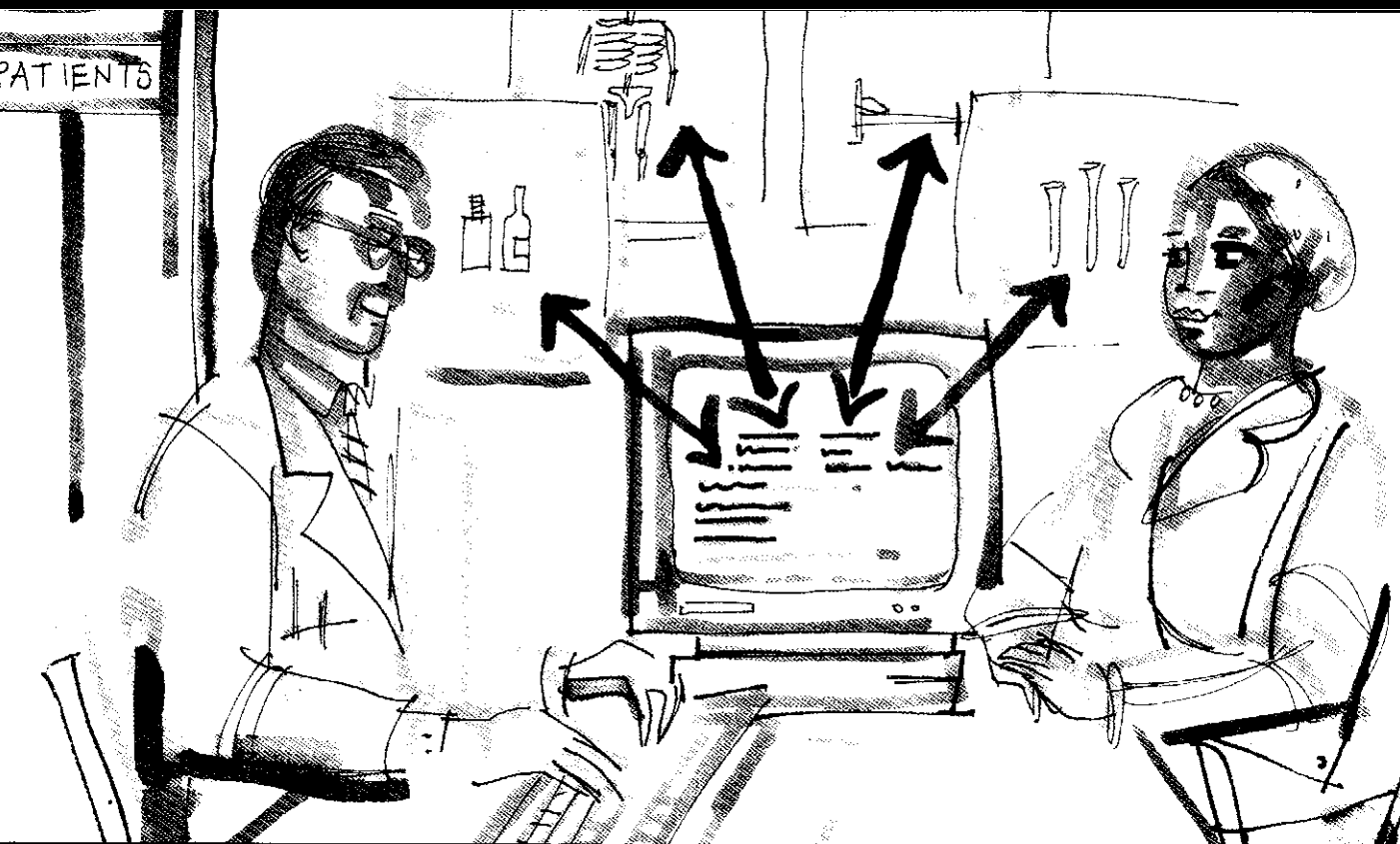




Information
Management
Group

An Information Management and
Technology Strategy for the NHS in England

A view for hospital doctors



Getting better with information

NHS Management
Executive

Dear Colleague

The NHS is facing increasing demands for more services, and for better quality services. Organisations within the NHS are being required to account for expenditure on health and utilisation of staff and resources. Initiatives such as *Working for Patients* and *The Health of the Nation* are re-focusing the NHS on promoting good health and preventing ill health, as well as on providing treatment for patients. Patients and clinicians expect to have up-to-date information available when and where it is needed. Often the information is available, but getting it to the right place at the right time needs to become far easier and quicker.

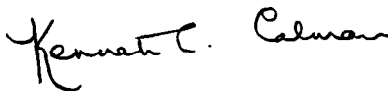
Computers and information technology have the potential to improve the quality, timeliness and accessibility of information, thereby improving the quality of patient care.

To improve the way we manage information and computer systems across the NHS, the Management Executive is promoting an Information Management and Technology (IM&T) Strategy.

The initiatives in the Strategy have been discussed extensively at a working group set up by the NHSME Chief Executive jointly with the Conference of Royal Colleges and representative organisations of the medical profession, including the JCC and GMSC. The group has discussed the input of the medical professions to central initiatives with an information systems element.

It is important that you, as a hospital doctor, are aware of the IM&T Strategy and its implications for you, for your hospital, and for patients. This booklet provides you with an overview of the IM&T Strategy and its initiatives. There will be discussions with representatives of the healthcare professions and other interested parties about the implementation of the Strategy. These will include, in particular, the safeguards required to maintain the compatibility of personal health information.

-I believe that the implementation of this Strategy will be a significant step forward for the NHS, for hospital doctors, and for patients, I hope you will support it.

A handwritten signature in black ink, reading "Kenneth Calman". The signature is written in a cursive, flowing style.

Kenneth Calman
Chief Medical Officer

Why an NHS strategy for IM&T?

As a hospital doctor, you need to have the right information about your patient, in the right place, at the right time. The Information Management and Technology (IM&T) Strategy has been developed to help ensure that this can be achieved. The Strategy will also ensure that implementation of information systems in the NHS is planned, coordinated and achieves value for money.

Effective computer information systems facilitate sharing of information across the NHS and enable information to be available when and where it is needed, subject to security and confidentiality safeguards.

Patient information is available, but there is much room for improving its accessibility and the speed with which it becomes available.' Subject to security and confidentiality safeguards, effective computer information systems enable information to be available when and where it is needed. For example, with effective computer linking, test results entered in Pathology would automatically appear on the Ward computer, supplies could be ordered directly from the Ward, and relevant elements of GP records would be available on the consultant's computer.

The IM&T Strategy sets in place a framework within which local strategies can be developed, reflecting local circumstances and priorities.

The IM&T Strategy gives a national lead. It sets in place a framework within which local strategies, reflecting local circumstances and priorities, can be developed. The IM&T Strategy ensures that doctors will maintain the freedom and control to act in the best interests of individual patients in any instance while benefiting from national guidance and frameworks.

Patients will benefit through increased efficiency, accuracy and timeliness.

Patients will benefit from the improved information and controlled information sharing in a number of ways. As appointments become scheduled more efficiently and staff spend less time chasing test results, patients will have less waiting time. As records become more accurate and up-to-date and test results are available more speedily, diagnoses can be made more quickly and accurately. As clinical care and discharge arrangements become scheduled more efficiently, there will be fewer overnight stays for patients.

What is the NHS IM&T Strategy?

The IM&T Strategy sets the direction for computerisation and how information sharing might be developed across the NHS. The Strategy will help ensure that implementation of information systems in the NHS is coordinated and managed so that maximum benefit can be achieved.

The IM&T Strategy is founded on the business goal of the NHS Management Executive, that is, to create a better health service for the nation

The IM&T Strategy is founded on the business goal of the NHS Management Executive. That goal is to create a better health service for the nation.

The Management Executive aims to create a better health service for the nation by:

ensuring services are of the highest quality and are responsive to the needs of patients

ensuring that health services are effectively targeted to improve the health of local populations

improving the efficiency of the services so that available resources deliver as great a volume of well-targeted effective services as possible.

Setting a vision for a better NHS

The IM&T Strategy's vision is to support better care and communication through IM&T,

The IM&T Strategy will help create a better NHS through the realisation of its strategic vision. That vision is to support better care and communication through the appropriate use of IM&T.

The vision is of an NHS where staff use information to improve continuously the service they provide, where an IM&T environment supports the controlled sharing of information across the Service, and where information is handled and communicated securely, quickly and efficiently. Through the realisation of this vision, the NHS will see enhanced quality, responsiveness, targeting and efficiency of its healthcare services.

The IM&T strategic vision will require changes in the way information is held and managed.

The Strategy is guided by the following key principles:

Information will be person-based

Person-based systems will hold a healthcare record for each individual which can be referenced to that person's NHS number.

Systems may be integrated

Wherever practical, data will need to be entered on a computer only once. Subsequently, it may be available, in whole or in part, on other designated NHS systems. Steps will be taken to protect confidential information from unauthorised access.

Information will be derived from operational systems

Subject to safeguards to maintain the confidentiality of personal health information, data will be obtained from systems used by healthcare professionals in their day-to-day work. There should be little need for different systems to capture information specifically for management purposes.

Information will be secure and confidential

Great care will be taken to ensure that the information held on computer will be available only to those who need to know it and who are *authorised* to know it.

Information will be shared across the NHS

Common standards and NHS-wide networking will allow computers to communicate so that information can be shared, subject to security and confidentiality safeguards.

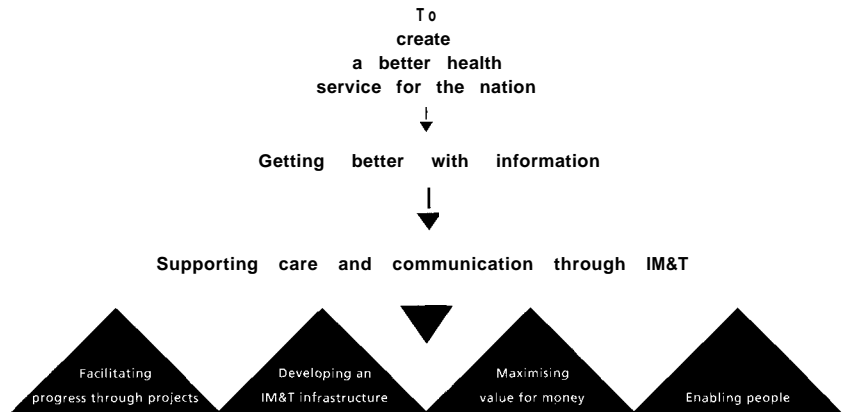
Strategic initiatives

A number of strategic initiatives will contribute to the achievement of the strategic vision. Figure 1 IM&T Strategy, illustrates how the strategic initiatives support the goal of the Management Executive.

Figure 1 IM&T Strategy

The overall goal of the Management Executive is supported by strategic Initiatives.

- Facilitating progress through projects
- Developing an IM&T infrastructure
- Maximising value for money
- Enabling people.



The initiatives are:

Facilitating progress through projects

The Strategy is supported by national facilitating projects. Many of these projects are currently underway. The Hospital Information Support Systems (HISS) project is the major hospital project.

Developing an IM&T infrastructure

NHS-wide information sharing will be facilitated by a national infrastructure, created through a number of components which reflect national policy. Local IM&T strategies will need to incorporate these components:

new format NHS patient number

shared NHS Administrative Registers

system of NHS-wide networking

thesaurus of coded clinical terms

national standards for computer-to-computer communication

framework for security and confidentiality

Maximising value for money

The Strategy provides a framework to ensure that the NHS gets the best possible value for money from expenditure on computer systems.

Enabling people

The Strategy includes plans for training and developing people to apply IM&T imaginatively and effectively.

The above four initiatives are described more fully on the following pages

Facilitating progress through projects

National facilitating projects will support the Strategy. Implementation will depend on local needs and resources.

A number of national facilitating projects which support the Strategy are underway or are being defined. Any local implementation will be under the control of hospitals themselves and will depend on local priorities, resources and investment decisions.

Integrated Clinical Workstation

ICWS will ensure that clinicians can interact with the system in an easy manner, and can use their own clinical terms.

An important project for doctors is Integrated Clinical Workstation (ICWS). In its early stages, this project is concentrating on ensuring that clinicians can interact with the computer in an easy manner, and can use their own clinical terms with an automatic mapping to the emerging set of common clinical terms. Moves towards the capture of the complete electronic patient record are regarded as a separate and long-term activity.

Hospital Information Support Systems

A critical focus of HISS is to ensure that investments are appraised and evaluated on the basis of Improving patient care.

The Hospital Information Support Systems (HISS) project is also very relevant to hospital doctors. The Information Management Group of the Management Executive (IMGME) is funding HISS to explore ways of building integrated computer systems within hospitals. As Figure 2 Hospital systems architecture, illustrates, a hospital information systems architecture is quite complex. A critical focus of HISS is to ensure that investments are appraised and evaluated on the basis of improving patient care. The HISS project has focused largely on the acute sector, but is currently expanding its role to include guidance and support for the non-acute hospital sector.

Integrated hospital systems will deliver a number of quantifiable qualitative and business benefits.

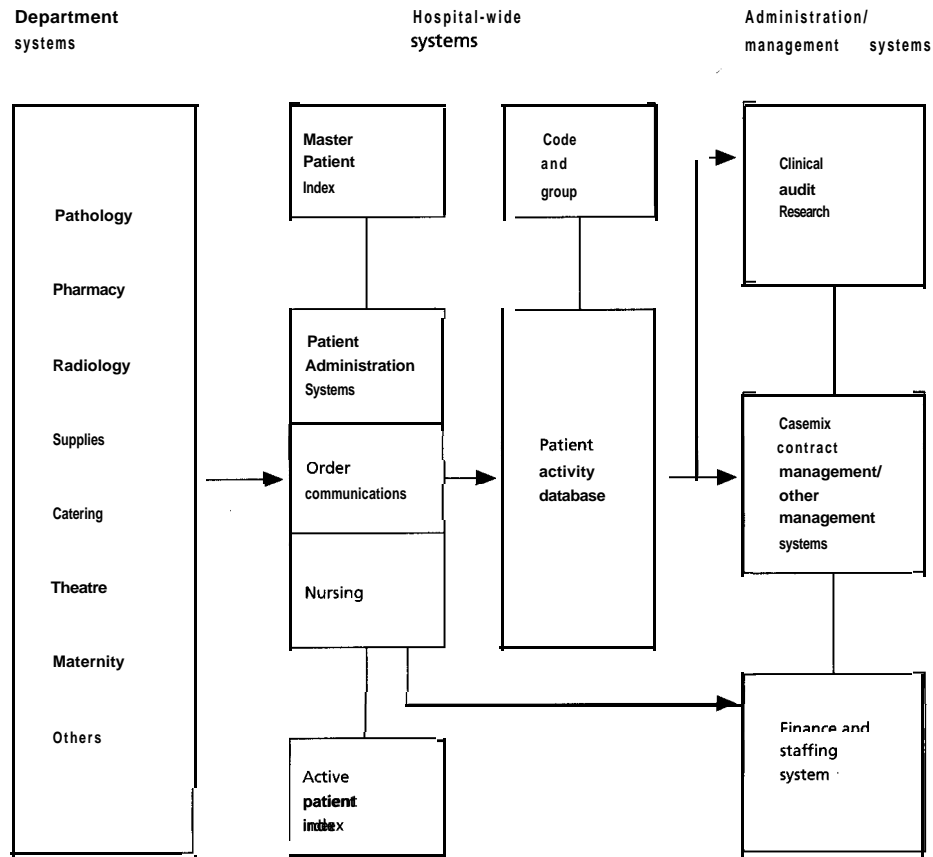
It is anticipated that integrated hospital systems will deliver a number of benefits:

Quantifiable benefits

Reduction in length of stay; reduction in inappropriate pathology and radiology tests; improved stock control.

Figure 2 Hospital systems architecture

The hospital environment is one of the most complex in which to make IM&T work. Figure 2 shows some of the links between department, hospital-wide and administration/management systems.



Qualitative benefits

More direct nursing care; faster diagnosis and treatment; fewer re-admissions; reduced waiting time in clinics.

Business benefits

Increased awareness of performance; better planning and control of services; better forecasts.

HISS will enable quicker, better test information, more efficient handling of case notes, and better management of resources

With a full range of integrated systems, and subject to security and confidentiality safeguards, doctors and patients will benefit because written test requests can be eliminated and results can be available faster. Abnormal results can be flagged automatically. Case notes can be handled more efficiently. HISS systems will make it easier to respond to clinic lists and admissions and to change appointments and schedules.

Further projects are in place to develop systems for GPs, DHAs, and community services.

Further projects are in place to develop systems for GPs, DHAs, and community services which will share information with hospital systems. For example, the Community Information Systems Project (CISP) runs in parallel to projects like HISS. It is working to ensure, for example, that hospital information on the discharge of patients is passed directly, but securely, to community systems.

Developing an IM&T infrastructure

An important initiative of the IM&T Strategy is a new IM&T infrastructure. The infrastructure includes a number of components which will facilitate sharing of information across the NHS, subject to security and confidentiality safeguards.

New format NHS number

A new format NHS number which uniquely identifies each person will be introduced.

Person-based systems need to be able to uniquely identify each person. To identify individuals, a new format NHS number – which supports automatic processing by computer – will be introduced. The new format number will be specific to the NHS. It will provide the basis for sharing person-based information across the NHS and at the same time enhance confidentiality. The NHS number will not replace all other identifiers – hospitals will be able to keep their own particular numbering systems – but it will become the common identifier on records which need to be shared. The new format number should be in place by **1995**.

NHS Administrative Registers

New NHS Administrative Registers will be set up to provide common, secure and up-to-date information about populations.

Hospitals need basic administrative patient details to carry out their work. At the moment, patient administrative data is frequently duplicated on separate FHSA, DHA, child health, community and hospital systems and cannot be shared. To avoid duplication and to enable sharing, a set of population registers – known as NHS Administrative Registers (NHSARS) – will be set up. These Administrative Registers will provide common, secure and up-to-date information about populations. The information they contain will be available across the NHS to all staff with the authority and need to view it.

Hospitals will retain their own patient records, but may wish to access the shared Register to collate administrative details, such as a patient's NHS number, or the address of their GP.

NHS-wide networking

A system of NHS-wide networking will enable hospitals to communicate with other NHS organisations

Many hospitals already have their own local network which links most or all of their systems. As part of the Strategy, a system of NHS-wide networking will be defined. This system will allow hospitals to communicate with other parts of the NHS, such as GP practices or commissioners of care, subject to security and confidentiality safeguards.

Exploited fully, networking could, for example, enable test results from Pathology to be available on computer to all those professionals who need to know it and are authorised to know it. Test results may be viewed on the Ward, included in a letter to the patient, viewed directly by the referring GP on his or her own computer, and passed to a clinical audit system. Costing information can be processed into finance systems to be incorporated into invoices sent electronically to the payer.

Thesaurus of coded clinical terms and groupings

A thesaurus of coded clinical terms will enable clinical terms to be understood at any location.

A major project is underway with the establishment of some forty Specialty Working Groups, which represent every medical specialty in the UK, to develop a national thesaurus of clinical terms in Read Codes. By 1 April 1994 each specialty will have completed its set of preferred terms, synonyms and abbreviations as used in the current paper medical record and these will have been incorporated into an agreed clinical thesaurus. The terms used in clinical work will include diagnoses, procedures, signs, symptoms, medical audit, outcomes and drugs. When a clinical term is entered into a computer, the computer will read and code it in a common preferred term. It can then be mapped back to the preferred local term at any location.

The thesaurus will enable patient records to be built up by all services in a consistent and exchangeable way.

The development of a thesaurus of clinical codes will enable clinicians to use systems that support their own terminology and allows the building up of patient records by doctors in hospitals, GP practices and community care in a consistent and exchangeable way. Computer analysis of these clinically meaningful terms, captured as part of the care process, will allow subsequent clinical management needs to be met.

Groupings of clinical terms will be developed and maintained to facilitate various types of analysis, for example, resource management (Healthcare Resource Groups), and medical audit.

Standards for computer-to-computer communication

New standards for computer-to-computer communications will ensure that computers can talk to one another.

National standards for computer-to-computer communications will be established to ensure that computers can talk to one another, subject to security and confidentiality safeguards. These standards are needed to achieve the required accuracy, speed and cost effectiveness in electronic communications. The new thesaurus of coded clinical terms will be an essential aspect of these standards as it will allow clinical terms to be transmitted

Framework for security and confidentiality

Information will only be available to those who are authorised to know it and who need to know it.

As information moves across the NHS, it is essential that patients and clinicians can be sure that information is handled in a secure and confidential manner. Breaches of confidentiality may be subject to disciplinary action. The IM&T Strategy gives careful consideration to the security and confidentiality of information and the physical security of computer hardware and software.

All organisations and IM&T users will have a responsibility to implement EL(92)60 during 1993

Guidance has been issued recently on confidentiality in the contracting process, EL(92)60. All local organisations and all staff using IM&T have a responsibility to implement this guidance during 1993. The Department of Health will shortly be consulting widely on draft guidelines on the confidentiality, use and disclosure of personal health information.

Care needs to be taken to ensure that computers themselves are robust and physically secure. Quality assurance standards will be set to provide optimum security and to allow hospitals to ensure that there there will be little or no disruption to patient care in case of system breakdown.

Maximising value for money

The IM&T Strategy will provide a framework to ensure that expenditure on computers achieves the best possible value for money. Projects are currently in place to help health organisations such as hospitals with difficult decisions about purchasing complex systems.

Providing guidance on user requirements

A common criticism of hospital systems is that they are designed on the basis of management rather than clinical information needs. The Management Executive is working through the Clinical Workstations project to address the needs of clinicians within an integrated hospital environment as laid out by the Hospital Information Support System project.

Assisting local procurement

In setting policies and standards for IM&T, the Management Executive is providing a national lead for hospitals and other organisations. Purchasing and implementation however remain local issues. Hospitals will continue to choose systems according to their local priorities and needs, while benefiting from the research and development work done centrally.

The purchasing power of individual NHS organisations can be maximised by the NHS using its considerable purchasing power to seek discounts. The HISS team is facilitating contract arrangements for common systems. Some hospitals have formed consortia to increase their purchasing power to get best benefits. The resulting contracts have been broadened into framework agreements available to the NHS as a whole.

Common user requirements will be identified to ensure needs are met.

Purchasing and implementation will be controlled locally, assisted by national research and development.

Setting quality standards

Suppliers will adhere to quality standards to ensure that their products meet NHS needs.

The Management Executive is working with suppliers to set quality and other standards for systems development in line with NHS requirements. In this way, the NHS will ensure that suppliers develop quality products which are appropriate to the NHS and its needs.

It is intended to introduce a purchasing questionnaire in agreement with suppliers. Suppliers will then certify compliance with national standards at the time of procurement.

Enabling people

The greatest barrier to achieving the significant potential benefits of the IM&T Strategy is not technology, but people. The Strategy will only work if clinicians, managers and IM&T staff are prepared to cooperate and work together, appreciating the potential IM&T has to offer and its pitfalls, as well as its technical and procurement aspects.

Training materials will be available to ensure that staff can use IM&T effectively.

Training requirements must be considered as an integral part of any IM&T related change. It is intended to continue to support for IM&T Training Coordinator posts and local learning centres, but the delivery of training remains a local responsibility. An IM&T Training Strategy, financed by the Management Executive and run by the NHS Training Directorate, will continue to provide training materials. This training will help ensure that doctors and other computer users can apply IM&T imaginatively and effectively.

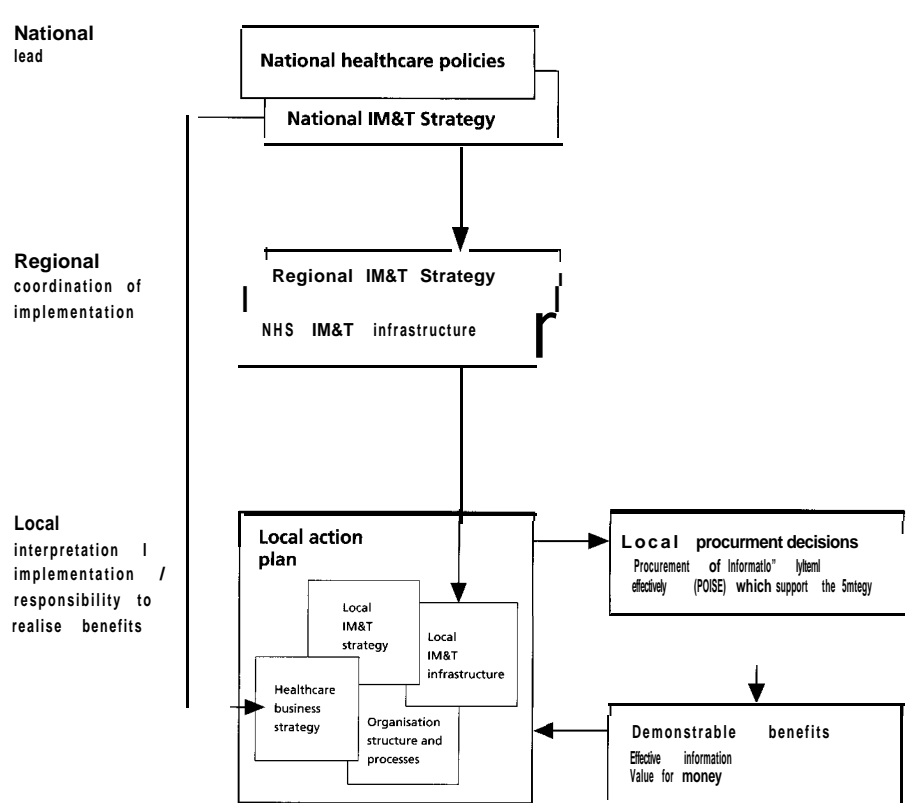
Hospital structures, processes and procedures need to get maximum benefits from the systems.

The Management Executive is also considering the organisational implications of IM&T through the HISS project. Managers, clinicians and IM&T staff will need to work together to ensure that hospital structures, processes and procedures are designed to get maximum benefits from the systems.

Making it work

The IM&T Strategy needs to be taken forward at all levels in the NHS in the context of local issues, priorities and resources. Figure 3 National lead – local implementation, illustrates how the IM&T Strategy will be implemented.

Figure 3 National lead – local implementation



National lead and local implementation

The Management Executive sets a national lead (through its Information Management Group). Its main responsibilities are to:

set policy

disseminate good practice

set expectation of benefits to be achieved

set standards, guidance and support.

An intermediate tier led by Regional Directors of Information, in conjunction with Management Executive outposts, will coordinate implementation. Their main responsibilities are to:

implement the IM&T infrastructure through collaboration between all NHS organisations

approve capital investments in excess of £1 million

provide a focus for feedback.

Managers, clinicians and IM&T staff working as a team will take the Strategy forward in their own organisation. Their main responsibilities will be to:

revise local strategies to maximise opportunities from the central lead

make sound procurement decisions and ensure compliance with standards

demonstrate strong management to achieve the intended benefits of local and national strategies.

The sooner IM&T changes take place, the sooner we will see benefits.

Patients and healthcare professionals will benefit from the changes brought about by the IM&T Strategy. The Strategy will take time to implement. Some organisations will need to change more dramatically than others. However, the sooner the changes take place, the sooner everyone, especially patients, can benefit from them. Some of the major milestones we can expect to see are given in Figure 4 Key milestones.

Your role in making it work

Hospital doctors can contribute by: working with managers, other clinicians and IM&T staff to develop local strategies; keeping in touch with developments in the ICWS, Common Clinical Terms, HISS and other national projects; ensuring that systems procured comply with national standards.

Hospital doctors can contribute to the implementation of the IM&T strategy by:

working with managers, other clinicians and IM&T staff to develop local strategies which maximise the opportunities to use IM&T to improve services and take advantage of the new possibilities for sharing information, subject to security and confidentiality safeguards.

keeping in touch with developments in the Integrated Clinical Workstation, Common Clinical Terms, HISS and other national projects

ensuring that systems procured comply with national standards.

Please take the time to find out more about the Strategy. Your local IM&T specialist will have a set of booklets on components of the Strategy. A list of available publications is given on the inside back cover of this booklet. For details on the regional approach to the Strategy, contact your Regional Director of Information. The IMGME will also have additional information.