

ICT Strategy

Strategy | 2002-2004



making a difference with technology



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NHS Greater Glasgow ICT Strategy

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Executive Summary

Clinical staff across NHS Greater Glasgow know exactly how technology can contribute to modernising and improving patient care. They are impatient to see things happen and expectations are running high.

This strategy responds to that energy and enthusiasm and sets out unambiguously:

- **what we are trying to achieve** - the vision of how information and technology will make a difference to patient care
- **how we will deliver the vision** - the operational plans and actions needed
- **the priority projects for the next 2 years, 2002-04** - that will lead the process of making a difference with technology
- **how we will work together across NHS Greater Glasgow to do this quickly** - so that all Trusts can benefit through the co-ordination and integration of this with each Trust's IM&T Strategy
- **how the process will be managed and resourced** - the project plans, staffing and funding requirements and time scales

So, what do we expect to be different in 2 years time?

Clinicians will have access to clinical information systems to support their day-to-day work, to better manage the care of their patients and to support their clinical governance and accreditation requirements.

Along the care pathway, clinical staff will be able to exchange patients' details with the extended care team and will do this electronically. Such communications will be supported by a secure and reliable broadband network that is capable of transmitting data and digital images, wherever and whenever required.

Clinical staff will have those business critical computer systems adequately supported by IT technical staff with good project managers available to take forward new initiatives.

Put succinctly, the aim is:

to "really make a difference" to patient care by providing, to the right person, the right information, under the right safeguards, whenever and wherever required.



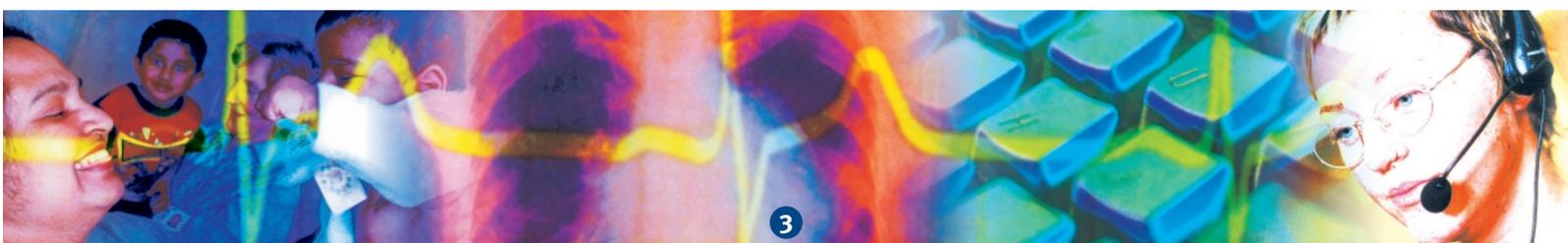
How do we intend to make IT happen?

Making this happen across NHS Greater Glasgow is a huge challenge. This strategy only summarises the tasks:

A series of specialist supplementary reports, prepared to support the development of this strategy, sets out the actions required to deliver the changes.

Over the next two years, 2002-4, we will concentrate on a number of priority projects that will:

- ensure that the work of every clinician is supported by immediate and convenient access to an appropriate clinical information system to support requirements for:
 - day-to-day patient management*
 - clinical governance requirements*
 - professional accreditation requirements*
 - ACAD hospitals*
- make sure that the maximum possible benefit is derived from the £1.5m spent in 2001 on new PC workstations for medical and nursing staff so that more staff can access:
 - relevant clinical information systems*
 - email and Web browsing*
 - electronic library and research databases*
- improve day-to-day IT support to reflect this increased usage and ensure training and development is available to enable "Managing with Information"
- upgrade the pan-Glasgow electronic network to reliably support data exchange and image transmission with broadband capacity
- improve medicines management and derive added benefit from the Pharmacy system procurement by implementing a major electronic prescribing project
- improve use of clinical time and derive added benefit from the recent Radiology procurement by developing Glasgow-wide proposals for PACs implementation
- complete and roll out the Diabetes Project across Glasgow and derive added benefit from extending to a further chronic disease care pathway and use this work as a basis for prototyping a Scottish EHR pilot
- complete the ECCI Project and extend the learning to other priority projects, particularly the 'Change Culture' needed to make effective use of technology
- achieve locally the targets set out in the National IM&T Strategy



What working together means

To ensure we do all of this efficiently and effectively, we will sign up to working together across NHS Greater Glasgow by:

- adopting agreed common technical and data standards across all Trusts
- "jointly" procuring major systems and agreeing common specifications for minor investments
- "jointly" procuring a major upgrade to the Glasgow-wide electronic network to meet future requirements for broadband and ensure services are jointly and reliably managed
- working to agreed shared policies to protect the security and confidentiality of patient data
- universal use of CHI as the unique patient identifier
- having an NHS Greater Glasgow ICT Programme Board to implement this Strategy by co-ordinating Trust Plans and allocating new funds
- pooling of project management skills across Trusts and having a shared approach to improving day-to-day IT support

Seeing a Difference

Ambitious maybe, but implementing this IT Strategy is no longer optional. Patients, carers and clinical staff across Glasgow expect no less.

We have clearly stated how we can make a difference. Endorsement of the strategy will make IT happen.

This strategy has been prepared by the NHS Greater Glasgow ICT Steering Group, chaired by Wendy Hull, Director of Finance & Information.



1 | Introduction

Clinical staff across NHS Greater Glasgow know exactly how they could modernise and improve patient care by using technology.

They are impatient to see things happen.

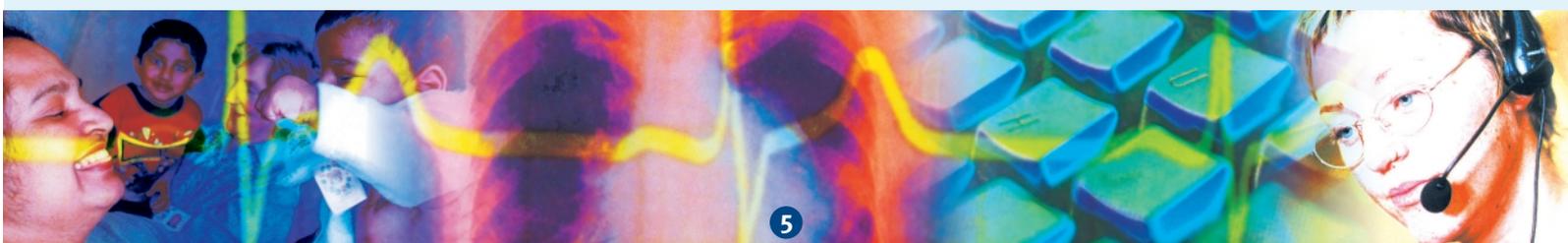
This strategy responds to that energy and enthusiasm in such a way that clinicians really do begin to "see a difference" by:

- re-stating the vision of the future as clinical staff see it - **the What (Section 2)**
- identifying what needs to be done to deliver the vision - **the Operational How (Section 3)**
- setting out how we will work together across all Trusts to make things happen - **the Organisational How (Section 4)**
- confirming the working arrangements to deliver the vision - **the Who (Section 5)**
- stating the funding requirements for the high priority projects and confirms the action plans and timescale - **the when (Sections 6&7)**

In so doing, the following sections define the Information and Communications Technology [ICT] Strategy for NHS Greater Glasgow. It sets out what we need to do across NHS Greater Glasgow to make real the ideas, hopes and ambitions our clinicians have to improve patient care through the use of information and communications technology.

We aim to make a real difference over the next two years, 2002-2004, and the action plan reflects this challenging timescale. Even so, as we make progress, new initiatives and opportunities will arise. This Strategy will need to reflect that dynamic environment with a continuous process of evaluation, updating and review.

This document is deliberately brief and concise. Behind it is a series of detailed reports, analyses and review documents, each of which is cross-referenced but not repeated. Annex A gives a brief synopsis of each of those supplementary reports and relevant sign posting is provided for those wishing to extend their understanding and reading.



2 | Using Technology to Support Patient Care

This section sets out the ideas, hopes and ambitions our clinicians have to improve patient care through the use of computer technology.

The clinical staff have clearly stated their vision: using technology to improve services is a major component of the modernisation agenda for the New NHS. The term "Clinical staff" throughout this document refers to all doctors, nurses, paramedical and other patient carers.

The objective of our strategy is therefore to deliver the following range of clinical benefits as a result of using technology:

1 Improve clinical decisions by:

giving wider clinical access to national/local databases, research libraries, etc;

giving improved access to patient data along the care pathway;

providing real time access to specialist clinical colleagues.

2 Speed up patient throughput by:

sending all GP test requests and results electronically;

sending all GP referrals, discharge and appointment details electronically;

supporting the ACAD hospitals and outreach clinics electronically to relieve hospital congestion and waiting;

reducing exposure to x-ray by introducing unified PACs system across Glasgow.

3 Develop clinical messaging by improving the reliability of existing electronic network links, between NHS Greater Glasgow sites (inter-site, WAN) and between clinical departments and wards on each site (intra-site, LAN):

updating the Glasgow-wide area network (WAN) by extending band width capacity;

clarifying arrangements for upgrading site-based local area networks (LANs) and set standards for conformance.

4 Relieve doctors hours by:

piloting teleworking in radiology to reduce on-call rota requirements;

prioritising other electronic image transmission from a range of diagnostic sources, e.g. electron microscopes and cardiographs;

piloting high speed access for clinical specialists working at home.



5 Make the day-to-day tasks of doctors, nurses and other staff simpler by:

enabling electronic referral, discharge and other form-based communications;

creating easy-to-use directory services;

devising system feedback to allow patient tracking and progress chasing.

6 Improve medicines management and thereby help avoid mistakes:

reducing transposition errors by introducing electronic ward prescribing;

piloting GP/Community Pharmacist links for prescribing and email.

7 Use effectively the clinical access to workstations by:

confirming objective of achieving national targets by April 2003, and thereby giving all clinical staff use of a computer for eMail and web-browsing;

allow better use of clinical information systems to support day-to-day operational work in all services, including Mental Health, Acute Care, Dental and Primary Care;

developing supporting LAN infrastructure to improve the reliability of PCs/workstations;

improving day-to-day IT support and training available to clinical staff.

8 Improve patient care by capturing patient details once and sharing these details across the extended care team (including Social Care) by:

supporting the proposed ACAD developments with appropriate IT to improve care and allow support to clinicians in the delivery of this new service model;

moving towards implementation of the Electronic Health Record (EHR) and aim to become a national pilot site;

extending the EHR approach piloted in Diabetes to Coronary Heart Disease services.

9 Extend those improvements at (8) above by exchanging information electronically with referring hospitals in the West of Scotland (WOS):

exploring Phase 2 NHS Net Solutions;

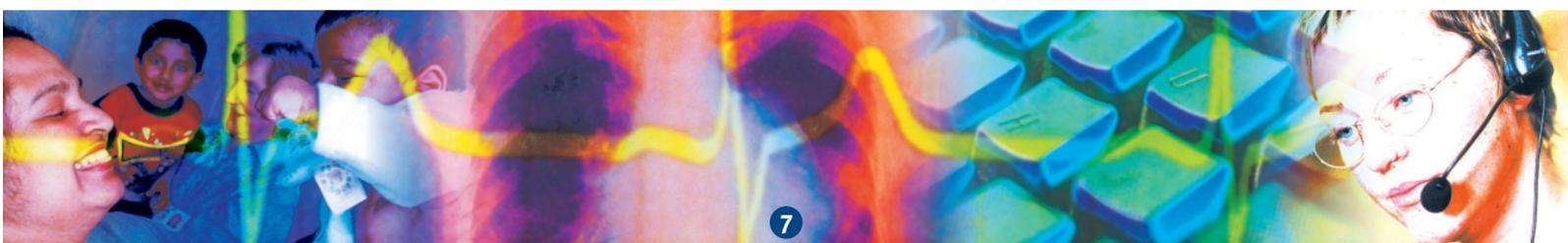
developing WOS applications to support referrals.

10 Enable the patient and carer to access information about their treatment by:

exploring remote data gathering on patient condition from home, e.g. heart monitoring;

developing query system to allow patients to email key workers as appropriate;

developing web-based patient consent arrangements and protocols.



11 Similarly enable the general public to access information about services, such as waiting list times and visiting hours by:

continuing to improve public access web sites and developing a pan-Glasgow style and shared support arrangements in conjunction with the Glasgow Alliance Project;

extending query system mentioned above to support referral Q&A facilities, access to complaints procedures, etc;

collaborating and creating opportunities provided by implementation in Glasgow of NHS 24.

12 Take all necessary steps to protect the security and confidentiality of data by:

agreeing pan-Glasgow policies;

involving patients/carers in arrangements for 'informed consent' approach and how this could be electronically enabled.

This list is not exhaustive, nor is it in any order of priority. It does however, give some feel to the vast range of opportunities that working with technology can provide.

The common local theme running through these proposals mirrors that set out in the National IM&T Strategy, namely:

to "really make a difference" to patient care by providing, to the right person, the right information, under the right safeguards, whenever and wherever required.

Initially, for most staff, this will mean that the work of their operational department is supported by an appropriate clinical information system, thereby giving immediate access to relevant patient data and information to support clinical governance and related professional accreditation requirements.

The exchange of information between clinical staff along the "patient's journey" in effect creates an 'electronic patient record' (EPR) for each phase of care: the matching of information about care provided while in hospital, to that provided by the District Nurse, to that provided by Social Care, the GP and so on eventually creates a comprehensive 'electronic health record' (EHR).

The soon-to-be Glasgow-wide Diabetes Project is in effect a "prototype" EHR. The identification of further care pathways, for example, stroke services, Chronic Heart Disease (CHD), and other chronic conditions, will allow the dissemination of the work done on the Diabetes Project and thereby extend the coverage of the EHR.

In this way, it is proposed that NHS Greater Glasgow should aim to be in a position to bid to become a national pilot for electronic records by the expected date later in 2002.

3 | Delivering the Vision

The preceding section sets out how clinicians want to use technology to improve patient care: behind each of the twelve themes is a myriad of ideas, many already happening now, many that could happen quickly as they are technically similar.

How then do we bring all of this together on a wide enough scale to "really make a difference"?

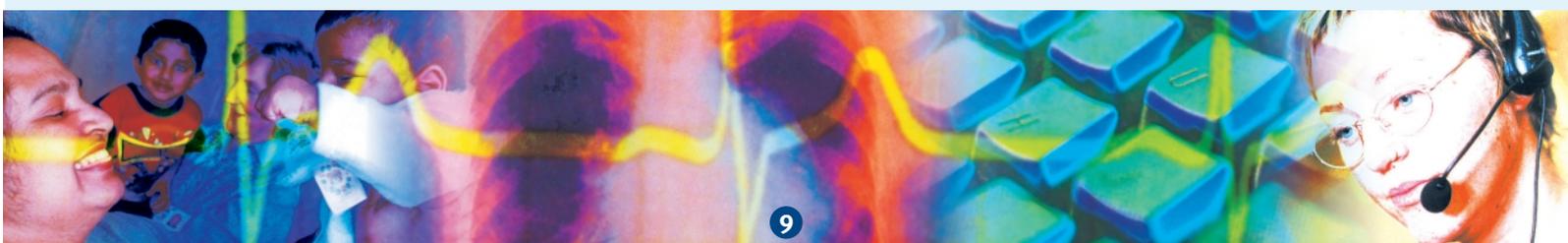
To deliver the vision this strategy proposes we must do the following:

- complete and review the 'baseline audit' started in 2001 to understand what exactly is happening, where, across all Glasgow Trusts;
see IM&T Baseline Audit Report
- use this understanding to share and extend successful initiatives that meet our stated objectives across more sites/more clinical services;
see IM&T Baseline Audit Report
- further use the results of the baseline audit to map progress in NHS Greater Glasgow against the matrix of "preparedness" and plan to deliver the target requirements of the National IM&T Strategy; specifically:
agree with each Trust proposals to improve use of CHI number;
achieve clinical access targets to PCs/workstations before end 2003;

ensure nursing staff have adequate access to PC workstations and recognise the particular needs of staff who work in more than one location;

see Local "Preparedness" Work

- use this approach to develop an action plan to get better "prepared" locally:
see Local "Preparedness" Work
- use the opportunity provided by the nationally funded ECCI Project to fast track locally some key aspects of the target requirements, namely;
electronic results reporting between GPs and diagnostic departments in hospitals, i.e. laboratories, X-Ray, and so on;
electronic discharge and referral letters again between GPs and hospitals;
progress ideas to support electronic appointments booking;
see NHS Greater Glasgow ECCI Project



- learn from these early ECCI projects what needs to be done to change the culture towards that of "managing with information" and prepare training and development support plans accordingly to sustain the wider implementation of this ICT Strategy;
see "Change Culture" - Training and Development Strategy
- upgrade the electronic network across Glasgow to support the modernisation of patient services set out in this strategy and thereby:
improve reliability and resilience;
extend capacity and band width to support data and digital images/ video exchange;
see Greater Glasgow Network Review
- continue to work with partner organisations, particularly Local Authorities, to further develop opportunities for technical collaboration to support 'Joint Futures' including shared investment in pan-Glasgow electronic network.
see "Joint Futures" Project - Information Sharing Between Local Authorities
see Steering Group Minutes

The combined effect of these proposals will create a common and shared technical unifying infrastructure across NHS Greater Glasgow.

With this in place, we can concentrate on progressing the following leading local priorities:

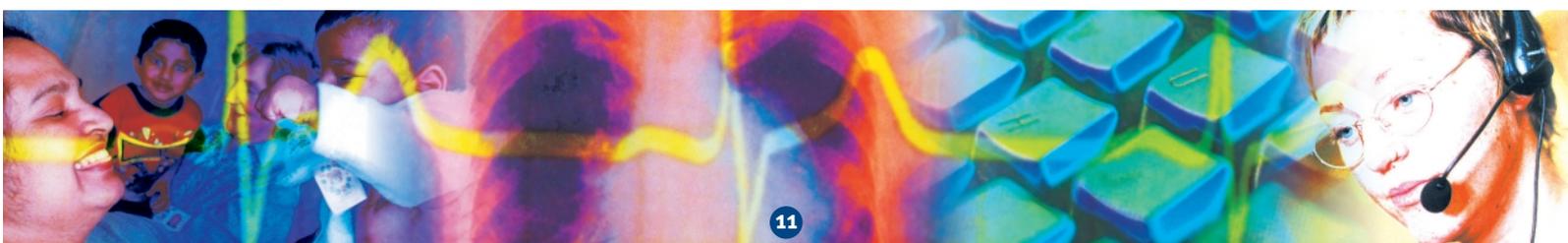
- ensure that the work of every clinician is supported by immediate and convenient access to an appropriate clinical information system to support requirements for:
day-to-day patient management;
clinical governance requirements;
professional accreditation requirements;
- achieve this by ensuring maximum benefit possible is derived from the £1.5m already spent in 2001 on new PCs/workstations for medical and nursing staff so that more staff can access:
relevant clinical information systems;
email and Web browsing;
electronic library and research databases;
- achieve locally the targets set out in the National IM&T Strategy;



- improve day-to-day IT support to reflect this increased usage and ensure training and development is available to enable "Managing with Information";
- upgrade the pan-Glasgow electronic network to reliably support data exchange and image transmission with broadband connectivity;
- improve medicines management and derive benefit from the Pharmacy system procurement by implementing a major electronic prescribing project;
- improve use of clinical time and derive benefit from the recent RIS procurement by undertaking a major teleradiology project, incorporating PACs developments and including image exchange with WOS referring hospitals;
- complete and roll out the Diabetes Project across Glasgow and derive benefit from extending to a further chronic disease care pathway and use this work as a basis for prototyping a Scottish EHR pilot;
- complete the ECCI Project and extend the learning to other priority projects, particularly the 'Change Culture' needed to make effective use of technology.

All of these actions are essential to support our key objective of improving patient care by the sharing and exchange of clinical data and are thus essential start-points for the development of a comprehensive Glasgow-wide EHR.

A synopsis of the key supporting reports referred to in this section and the related individual action and project plans is given in Annex A to this report.



4 | Working Together

So far we have stated:

that the aim of the strategy is to deliver, through the use of technology, the range of improvements to patient care identified by clinical staff (Section 2)

what needs to be done to deliver those objectives, drawing on the actions set out in a series of supporting supplementary reports (Section 3 and Annex A).

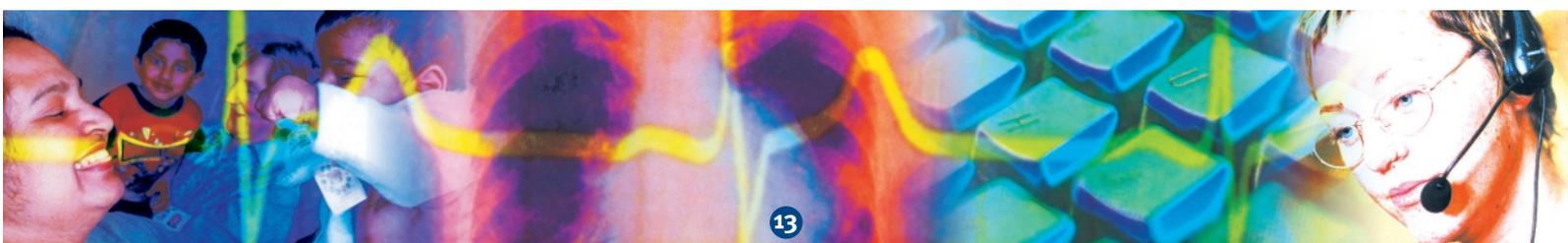
However, these actions will only be effective if we agree to work together across NHS Greater Glasgow, and increasingly widen that collaboration to include Local Authority partners.

This strategy proposes that working together means we must do the following:

- only invest in technology that conforms to agreed technical and data standards;
- continue to undertake joint procurement for all major investment, as has been the case for the Radiology and Pharmacy systems;
- procure individually for minor investment, but in line with agreed common user and technical specifications, for instance for clinical information systems;
- have a common shared Glasgow-wide electronic network that connects all users, so that data and images can be captured once and freely exchanged;
- undertake a joint procurement of the network upgrade in line with broadband requirements set out in the Network Review;
- co-ordinate all aspects of managing and supporting that network including agreeing policies on "network rules of the road", such as address book conventions, email management, virus checking and so on;



- have comprehensive Glasgow-wide sign up to shared policies safeguarding the security and confidentiality of clinical information;
 - universally recognise the importance of the CHI number to uniquely identify patients and plan to extend its use accordingly;
 - work to harmonise Trusts' IM&T Strategies with the strategic ICT objectives stated for NHS Greater Glasgow;
 - have a single NHS Greater Glasgow ICT Programme Board to oversee the implementation of this strategy, which will comprise representatives of all Trusts, the NHS Board and partner agencies, including patient and carer organisations;
 - agree to the pooling of new funds available for investment in ICT, which is allocated by the Programme Board to Trusts in line with the agreed objectives of this strategy;
 - agree to the pooling of project management skills and resources so that clinicians have access to senior IT Managers in such a way that ideas can be developed and integrated within and between Trusts as necessary;
 - further agree to review and improve the arrangements for day-to-day IT support currently provided to clinical staff.
- Only by working together can we achieve the objectives of this Strategy: it is critical to the rapid roll-out of working and workable technical solutions across NHS Greater Glasgow and it thereby ensures all investment is cost-effective.
- Early confirmation of these principles so thereby ensuring that "Working Together" across NHS Greater Glasgow is a practical reality is key to delivering this ICT Strategy.**



5 | Making IT Happen

Delivering such a comprehensive and challenging strategy as that set out in this document will require effective programme and project management to ensure co-ordination and integration of those actions required across Glasgow with those to be undertaken by each Trust.

This section sets out the organisational arrangements to support the implementation of this strategy.

The arrangements fall into two categories:

- a pan-Glasgow ICT Programme Board to manage the implementation of this strategy;
- the involvement of Trust IT Managers to project manage the implementation and thereby ensure the synchronisation of Glasgow-wide actions with Trust-specific delivery.

Firstly, to ensure the implementation of the strategy it is proposed to:

- create an NHS Greater Glasgow ICT Programme Board with overall responsibility for co-ordinating and prioritising the tasks set out in this document and ensuring adherence to the principles of working together;
- make the ICT Programme Board accountable to Greater Glasgow NHS Board and be chaired by a Director of that Board, currently the Director of Finance;



- confirm that the Membership of the ICT Programme Board will include:
for each Trust, Medical Director and Director of Finance (or representative) with the authority to commit clinical and financial resources respectively to the plans;

Chairs of individual Project Groups as created;

representatives of the three proposed sub-groups to the ICT Programme Board, namely:

Technical Group (Trust IT Managers and equivalent from partner agencies);

Change Culture/Training Group (Trust OD, HR and IT Training staff);

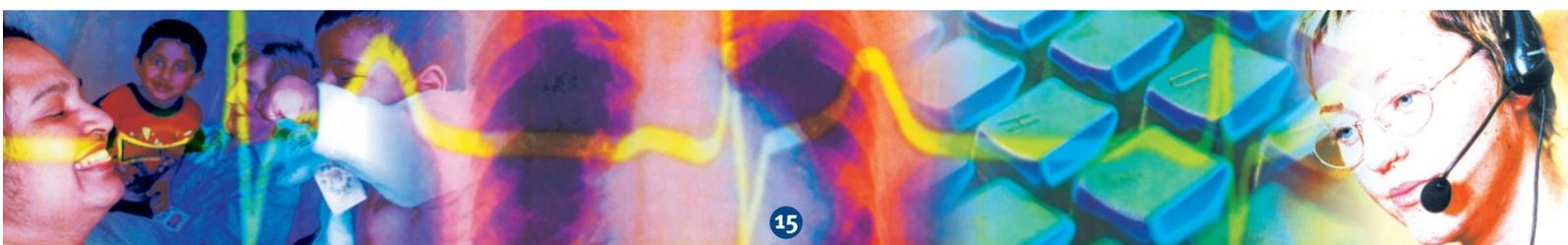
Clinical Reference Group (Trust Clinical staff, patient and carer organisations and similar from partner agencies).

The diagram overleaf illustrates the proposed arrangements: the ICT Programme Board in effect formalises the work of the existing ICT Steering Group.

Overall responsibility for delivering this strategy rests with the ICT Programme Board, accountable to Greater Glasgow NHS Board.

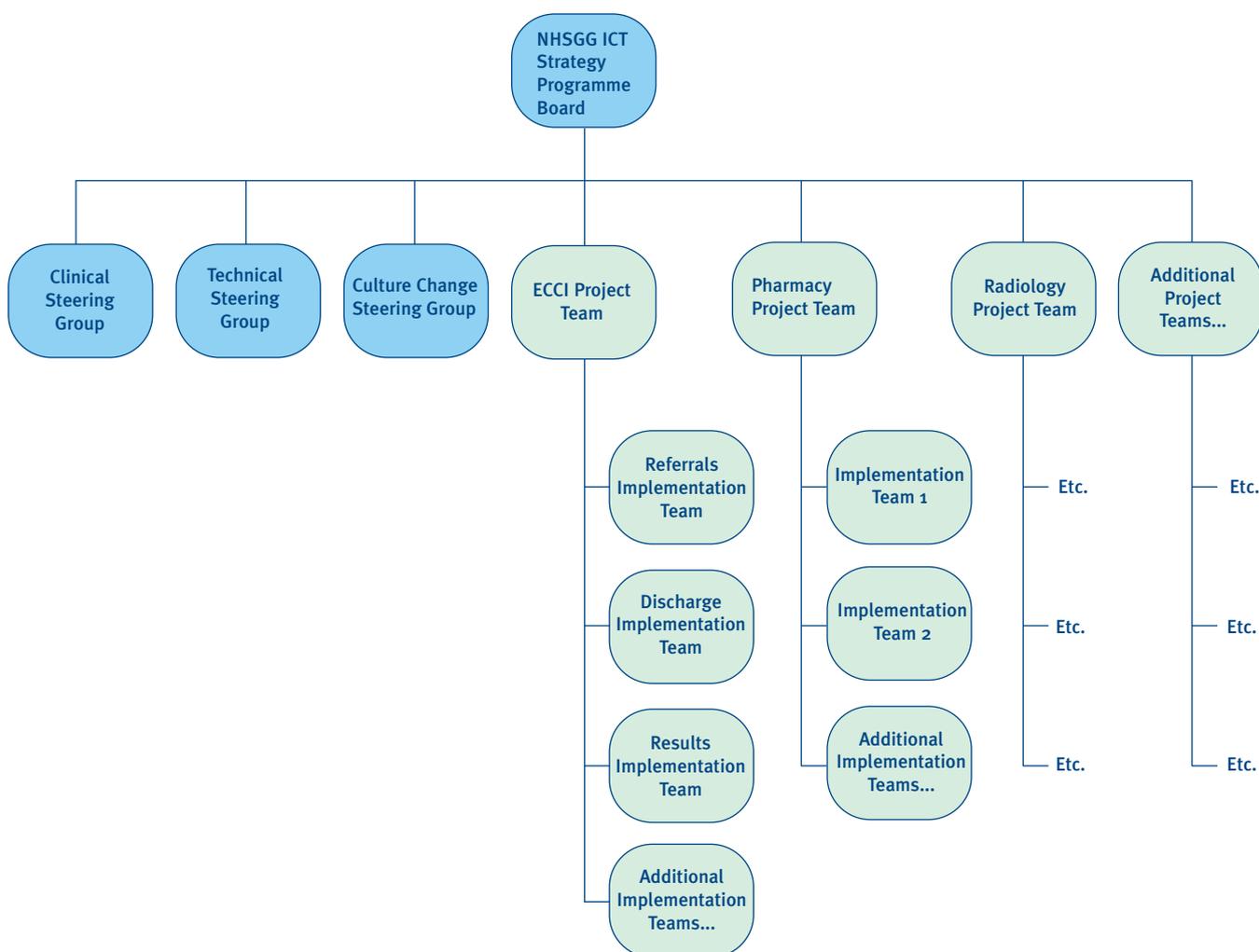
Secondly, to ensure clinical staff have access to senior IT Trust Project Managers and ensure the implementation of the tasks identified in this strategy, the following operational arrangements are essential:

- that an opportunity is created for each Trust's IT Manager to act in a dual role as both lead for strategy implementation in his/her own Trust and Glasgow-wide as part of a "virtual" project management group to support the implementation of this strategy;
- that the subsequent implementation plans will be managed by the relevant Trust involving Trust-based IT support staff. Initially, additional staff will be funded by the ECCI Project;
- that the virtual team of the four Trust IT managers and the ECCI Project Manager will, under the direction of the Board's Director of Finance, be responsible for the co-ordination of all operational requirements to deliver this strategy;



NHS Greater Glasgow ICT Strategy Programme Structure Diagram

Version 1 - 26th March 2002



- that acting in this dual role, Trust IT Managers will be uniquely placed to co-ordinate clinical initiatives in their Trust, harmonising solutions with the Glasgow-wide strategy and having access to colleagues in other Trusts to assist rapid roll-out opportunities
- that Trusts would be reimbursed for the time lost to the Glasgow-wide team and this funding could be used to augment Trust IT teams.

This proposal formalises the current way of working across IT staff in NHS Greater Glasgow. It ensures:

clinical staff in each Trust have a senior point of contact for help in developing new proposals for using technology;

each Trust IT Manager can uniquely combine Trust-specific knowledge with an understanding of the "bigger picture" of the Glasgow-wide strategy implementation;

regular meetings of the "virtual" project team will ensure:

co-ordination of the strategy;

maximum exchange of "know-how" as projects develop;

speed up opportunities for roll-out;

continued involvement of Trust IT staff in the new, innovative project work;

access to a wide mix of staff and skills.

The recruitment and retention of good IT staff is an issue for the NHS. It is consequently important that current staff are incentivised by opportunities to be fully involved in new and innovative project work as would be entailed in the delivery of this strategy. To this end it is further proposed that:

a review is undertaken of the best way to provide more effective day-to-day IT support arrangements so that skilled staff can be freed from more routine operational duties.

This review should explore opportunities to outsource more of this work, to create a single help-desk and improve access to training.

Clearly, the ambitions of this ICT Strategy will not be delivered until effective project management arrangements are in place. The proposals set out in this section combine the strength of the individual roles with a clear route for those actions that need pan-Glasgow co-ordination and resourcing.



6 | Investing in ICT

Finally, and inevitably, implementing this strategy will not be cheap. Major investment is required to "really make a difference" and see major modernisation through the use of IT in delivering patient care.

This section sets out some of those investment requirements, needing both manpower resources as well as money.

To ensure implementation, this strategy proposes that the following must happen:

- that early progress is made through the use of ECCI funding in 2002/3 to support:
 - 12 wte IT support staff, three per Trust, to reflect project priorities. Trust IT Managers to ensure robust and balanced mix of skills is recruited;*
 - 10 wte IT Training support staff and Training Co-ordinator, again to be located in each Trust to provide direct support to clinical staff in "using and managing with information";*
 - IT Managers' secondments to the "Virtual" Implementation Team.*
- that a **minimum** of £1m p.a. capital is allocated to fund major Glasgow-wide IT procurements
- that additional funding to upgrade the Glasgow-wide electronic network is identified either as capital or revenue equivalent for a managed service over the next two years

- that the on-going support staff requirements are projected beyond the completion of the ECCI funding in March 2003. Initial projections indicate a further £0.75m pa **minimum** requirement
- that all funds to support the implementation of this strategy are allocated by the Programme Board in line with agreed priorities
- that Trusts review existing funding available for IT using the National IM&T Investment pro-forma to ensure total spend is maintained.

Further detailed work is required to refine specific funding proposals in each of the two years 2002/3 and 2003/4. This in turn will be influenced by extent of national funding likely to be available.



7| Project Plan

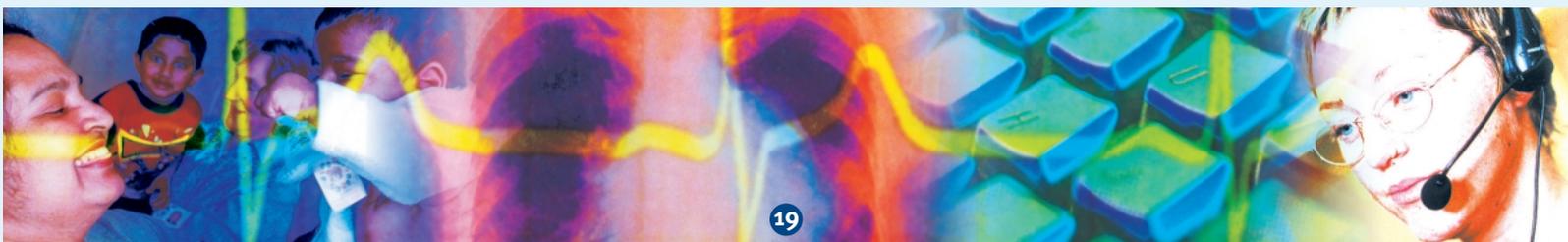
The following project chart brings together the priority tasks identified in this strategy and gives a preliminary indication of timescale.

For the purposes of this document, project outcomes are highly summarised and have been aggregated from the detailed individual project plans agreed by each project group and/or as stated in the relevant supporting report.

Key

- ▬ Progress
- ▬ Task
- ◆ Milestone
- - - - - Split

ID	Task Number	Duration	2003				2004				2005		
			Qtr1	Qtr2	Qtr3	Qtr4	Qtr1	Qtr2	Qtr3	Qtr4	Qtr1		
1	PROGRESSING GLASGOW PRIORITIES	24 months±	▬										
2	Improve clinical access to PCs / workstations	12 months	▬										
3	Achieve targets	12 months	▬										
4	Improve day-to-day support	6 months	▬										
5	Enable web browsing and email for all clinical staff	12 months	▬										
6	Improve eLibrary / research database access	6 months	▬										
7	Improve access to relevant clinical information systems	24 months	▬										
8	Evaluate existing systems	3 months	▬										
9	Produce common specification	3 months	▬										
10	Consider 'fast track' procurement	24 months	▬										
11	Consider preparedness for EHR pilot	24 months	▬										
12	Complete diabetes project	12 months	▬										
13	Consider replicating in coronary heart disease services	24 months	▬										
14	Undertake Teleradiology project using PACS to enable remote working	24 months	▬										
15	Agree terms of reference	6 months	▬										
16	Select pilot priorities	6 months	▬										
17	Evaluate and roll out	12 months	▬										
18	Enable priority projects for emedicines management	12 months	▬										
19	Agree terms of reference	3 months	▬										
20	Select pilot priorities	3 months	▬										
21	Evaluate and roll out	6 months	▬										
22	"Progress ""Joint Futures"" pilots with councils"	12 months	▬										
23	IMPROVE PREPAREDNESS TO DELIVER NATIONAL TARGETS (See Baseline Audit Report)	15 months	▬										
24	CHI	12 months	▬										
25	Provide electronic link between PAS / CIS / HIS / CHI	12 months	▬										
26	Speed up STAR project (CHI data cleanup at GP practices)	12 months	▬										
27	Utilise XML standards where appropriate	12 months	▬										
28	Provide access to CHI on key clinical (disparate) systems	12 months	▬										
29	Clinical information systems	12 months	▬										
30	"Improve access to clinical information " systems in all areas, particularly to support ACADS	6 months	▬										
31	Promote effective GPASS & CDSS (or equivalent) use by GPs and Community nursing	6 months	▬										
32	"Utilise national standards where available and appropriate (e.g. SIGN, CRAG)"	12 months	▬										
33	Maximise benefit from investment already made by using existing systems where possible	12 months	▬										
34	Pool experience to maximise benefit from Telemedicine initiatives	12 months	▬										
35	Rationalise number of physical implementations of the same system	12 months	▬										



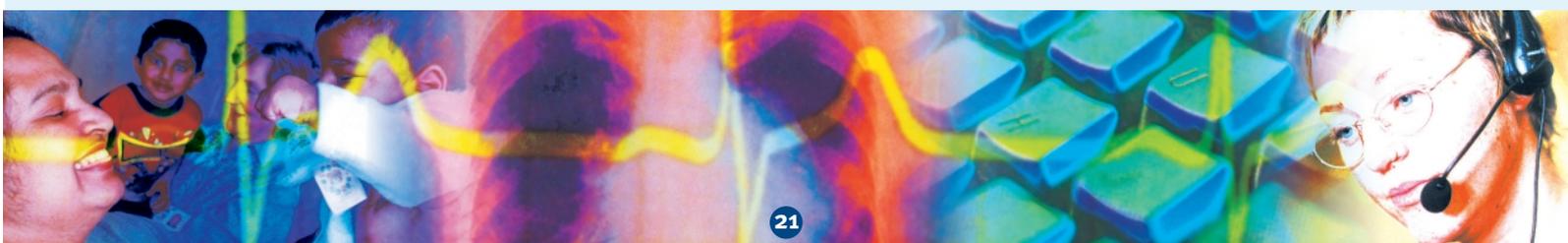
ID	Task Number	Duration	2003				2004				2005
			Qtr1	Qtr2	Qtr3	Qtr4	Qtr1	Qtr2	Qtr3	Qtr4	Qtr1
36	Implement web-based front-end to key systems with clinical interface where appropriate	9 months	[Bar]								
37	Patient confidentiality	6 months	[Bar]								
38	Adopt National Encryption Policy when available	6 months	[Bar]								
39	Implement CSAGS recommendations when finalised	6 months	[Bar]								
40	Information provision	9 months	[Bar]								
41	Promote wider access to NHSScotland staff to e-mail and web sites	9 months	[Bar]								
42	Implement web front-end to applications	9 months	[Bar]								
43	IM&T infrastructure	15 months	[Bar]								
44	Replace obsolete GP messaging servers	6 months	[Bar]								
45	Upgrade networks (detail from network review)	9 months	[Bar]								
46	Assess costs and benefits of Storage Array Network (SAN) technology	15 months	[Bar]								
47	People issues	6 months	[Bar]								
48	"Utilise external partner resources to release staff for value-adding, pro-active tasks"	0 months	[Bar]								
49	Implement consistent pan-Glasgow grading and reward structure	6 months	[Bar]								
50	ELECTRONIC NETWORK REVIEW	12 months	[Bar]								
51	Consult with SEHD for fit with national procurement	3 months	[Bar]								
52	Consult with Local Authority partners for possible joint procurement	3 months		[Bar]							
53	Develop operational requirement	5 months	[Bar]								
54	Agree procurement process and funding	1 month		[Bar]							
55	Complete procurement	6 months			[Bar]						
56	Consider immediate requirements for	6 months	[Bar]								
57	Primary Care Trust	3 months	[Bar]								
58	Hospitals core network	3 months	[Bar]								
59	Libraries project	3 months	[Bar]								
60	Agree pan-Glasgow policies for network management & support	6 months	[Bar]								
61	ECCI PROJECT	12 months	[Bar]								
62	Referral pilot	3 months	[Bar]								
63	Referral roll out	9 months	[Bar]								
64	Results pilot	3 months	[Bar]								
65	Results roll out	8 months	[Bar]								
66	Discharge pilot	3 months	[Bar]								
67	Discharge roll out	7 months	[Bar]								
68	Evaluation & lessons learned	12 months	[Bar]								
69	Planning for post-ECCI phase	3 months				[Bar]					
70	CHANGE CULTURE PROGRAMME	24 months	[Bar]								
71	Training & development plan to support ECCI referral pilot	6 months	[Bar]								
72	Evaluate & extend approach to other ECCI projects	3 months		[Bar]							
73	Evaluate & plan full roll-out in generic 'Change Culture' strategy	12 months	[Bar]								
74	Implement full roll-out to support ICT strategy	12 months					[Bar]				
75	COMPLETE BASELINE AUDIT	6 months	[Bar]								
76	Consider results and scope for rationalisation & further systems roll out	3 months	[Bar]								
77	Prepare generic operational requirement for clinical information systems	3 months		[Bar]							
78	CHANGE CULTURE	12 months	[Bar]								
79	Phase I - develop training & development plan in support of ECCI referral project	3 months	[Bar]								
80	Phase II - evaluate & further develop approach & materials for use in other ECCI projects	3 months		[Bar]							
81	Phase III - evaluate & develop for use in full roll out & document Change Culture Strategy	3 months			[Bar]						
82	Phase IV - adopt 'Change Culture' strategy in roll-out of Glasgow ICT programme	3 months				[Bar]					
83	IM&T INVESTMENT PLAN	3 months	[Bar]								
84	Complete expenditure pro-formas for all Trusts	3 months	[Bar]								
85	Agree investment funding for 2002/03	3 months	[Bar]								



Annex A: Key Supporting Reports

This annex provides a synopsis of each of the key reports which support the main ICT Strategy with recommendations and actions as follows:

(i) IM&T Baseline Audit Report	<i>A detailed description of all computer applications currently running in Trusts that support clinical work.</i>
(ii) Local "Preparedness" Work	<i>A detailed analysis against the national six themes used to assess local "readiness" to deliver the requirements of the National IM&T Strategy.</i>
(iii) NHS Greater Glasgow ECCI Project	<i>Detailed plans to improve clinical messaging between hospitals and GPs for: reporting diagnostic results sending and receiving referral and discharge summaries booking appointments</i>
(iv) NHS Greater Glasgow Network Review	<i>Comprehensive proposals to upgrade the Glasgow wide electronic network to support broadband capacity and improve reliability.</i>
(v) "Change Culture" - Training and Development Strategy	<i>Detailed proposals of how to shift the culture amongst clinical staff towards that of "managing with information", enabled by confidence in using IT.</i>
(vi) "Joint Futures" Projects - Information Sharing Between Local Authorities	<i>Details of joint project work underway with various local councils to support the shared assessment process with common protocols.</i>



Introduction

Priority areas for local action

NHSScotland has recently updated the national IM&T strategy emphasising three main themes and six key priorities for local action. These priorities are:-

Support for Direct Patient Care

1. Establish the **Community Health Index** (CHI number) as the unique ‘tag’ for NHSScotland communications.
2. **Clinical Information Systems** supporting the broad range of clinical specialties.
3. Protection of **patient confidentiality**.

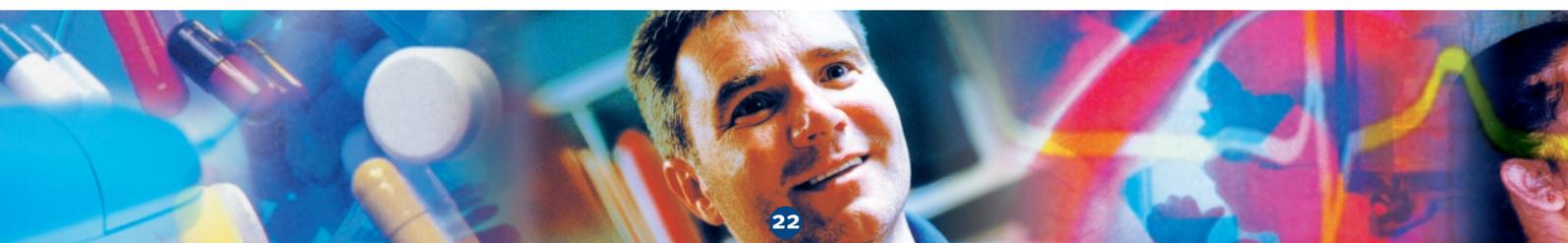
Providing Information

4. Relevant and timely **Information provided for patients**, the public and NHS Scotland staff.

Developing the Necessary Infrastructure

5. Underpinning **IM&T Infrastructure** in place.
6. Underpinning **people issues** including appropriate IM&T support and training. Recruitment and training.

These priorities are aimed at supporting the further development and implementation of the care pathway model of service delivery and at providing significantly increased clinical benefits. The priorities, and corresponding and measures of IM&T maturity have formed the basis for the work undertaken by NHS Glasgow to assess “preparedness” across the Trusts as outlined in this section.

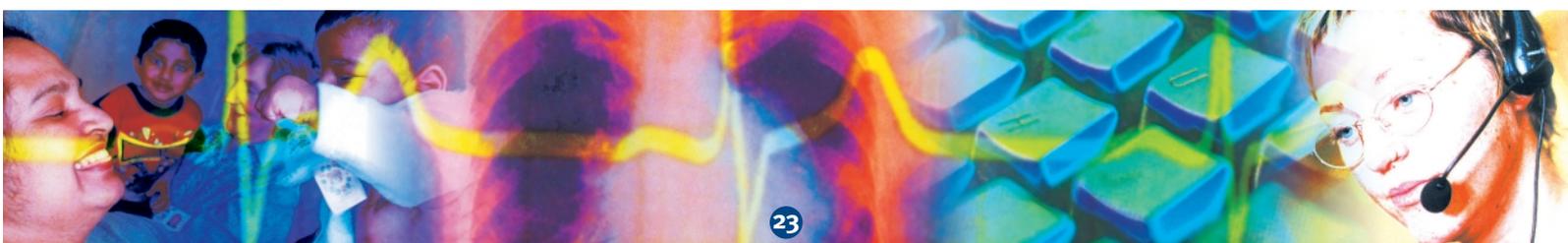


The following work has been undertaken by NHS Greater Glasgow to measure IM&T preparedness and provide factual input to the developing ICT strategy and development plans:-

- Development of an audit/catalogue;
- Assessment of the level of maturity for key systems;
- Wider tabulation of maturity and identification of proposed and planned developments for each Trust.

Outcomes

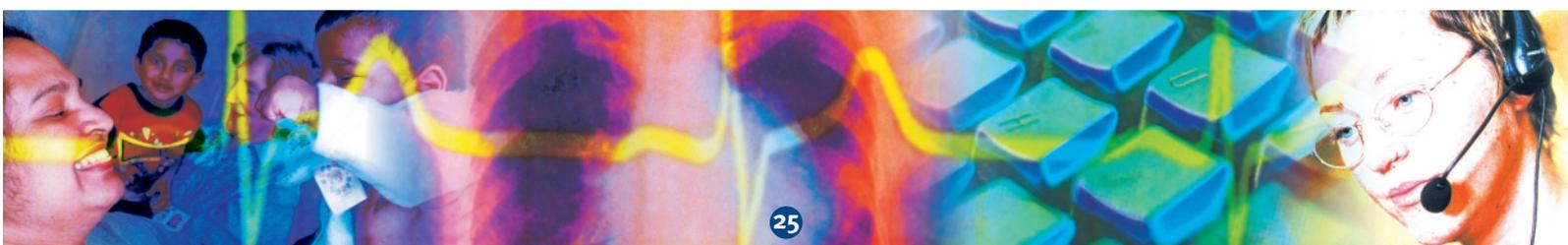
- Catalogue of clinical systems (including percentage usage Trust wide and at point of care).
- Analysis of audit and presentation of results graphically in the form of fuzzy ellipses.
- Summary of maturity by Trust and identification of pan Glasgow IM&T opportunities/activities
- Factual input to the developing ICT Strategy.
- Identification of IM&T priorities pan Glasgow.
- Information sharing between Trusts.



Findings of "preparedness" studies - against 6 key National Strategy priorities for local action

Key Priority	Summary of Board Position - Current	Summary of Board Position - Planned or underway
CHI	1. Variety of approaches taken to provision of core patient system - Patient Administration System (PAS) / Clinical Information System (CIS) / Health Information System (HIS)	1. Star & Partners project aimed at clean up and population of GP held CHI data
	2. Single MPI in place for each Trust or plans to implement single MPI	2. Widen use base for CIS and HIS
	3. Data quality recognised as critical and built into processes or addressed through data cleanup exercises	3. Develop protocols and agreements to enable inter-agency information sharing
	4. CHI generally held on PAS, CIS and HIS but not a primary key	
	5. Manual gatekeeper process adopted to populate CHI but seen as flawed in present form	
Clinical Information Systems	1. Basic EPR held in some CIS/HIS systems	1. See Section 3 on ECCI project
	2. Different systems or different implementations used to provide similar functionality at different locations. Few common systems across Trusts	2. Widen Clinical use base for CIS and HIS
	3. Little direct clinical benefit from systems	3. Increase electronic integration between systems e.g. demographics, order comms links
	4. Very few systems provide clinical decision support	4. Develop, collaborate and promote Telemedicine initiatives
	5. Many disparate systems, little electronic integration i.e. mainly manual interfaces	5. Evaluate Clinical Decision Support System (CDSS) as front end to GPASS
	6. National systems used where available and appropriate	6. Provide wider access to systems from appropriate locations and by appropriate groups (e.g. ward based use, Out Of Hours groups)
	7. Little sharing between Primary & Secondary care	7. Develop high priority clinical modules

Patient Confidentiality	1. Recognised as critical but well managed - generally people and policies in place to address Data Protection Act (1998), Caldicott, IT security	1. Assess and respond to CSAGS revisions
	2. Training programmes and awareness material developed	
	3. BS7799 (IT Security standard) not generally adopted	
Information Provision	1. All Trusts utilise SHOW as host for web sites and comply with style guidelines	1. Add sites as required e.g. as new services are developed
	2. Information management policies and practices agreed and implemented	2. Pass ownership of sites to user groups
	3. Contact information at various levels of completeness and accuracy	
	4. Links to library services and clinical guidelines in place	
	5. Local intranet sites available	
IM&T Infrastructure	1. Infrastructure inadequate to support ECCI	1. Network review underway (will provide main workplan)
	2. Specification of installed network infrastructure variable	2. Implement upgrades to maximise benefit from new hardware and software developments
	3. GP messaging servers obsolete	
	4. Mix of internal and external resource used to provide basic services	
	5. No common external service provider	
	6. Common procurement of Radiology system underway	
People Issues	1. Mix of internal and external personnel on teams	
	2. Structure and responsibilities of IT (or IM&T and IM) not common across all Trusts	
	3. Emphasis on operational support rather than development	
	4. Level of IT staff grade, salary and training variable.	



(iii) SYNOPSIS NHS Greater Glasgow ECCI Project

Introduction

The Electronic Clinical Communications Implementation project (ECCI) is a Scottish Executive-sponsored initiative that aims to improve communication of clinical information between primary and secondary care using technology.

Every NHS Board area in Scotland has its own ECCI project. There are three ECCI "phases", with Greater Glasgow being a third-phase site. Consequently NHS Greater Glasgow's ECCI Project began in earnest in August 2001.

The end date for all ECCI projects is March 2003.

Clinical Priorities

A large, broadly representative, group of clinical staff met in November 2001 to consider the details of what NHS Greater Glasgow should aim to achieve with its ECCI Project. The clear feedback from this group identified the following three priorities as being the most important to clinical staff:

- Diagnostic Test Results;
- Electronic Discharge Letters;
- Electronic Referrals.

The Scottish Executive mandates that every ECCI Project must address direct booking of outpatient appointments. The clinical group perceived this as a very low priority because of the limited benefits to patient care.

ECCI and the Strategy

NHS Greater Glasgow sees ECCI as an opportunity to "kick start" strategic plans to improve clinical communication using technology.

The project has fixed-term funding that will allow detailed work on the operational and "change culture" issues to be carried out, which will provide a firm foundation from which to plan and implement the wide rollout of useful clinical applications of technology.

The ECCI project is ambitious in scope and timescale. Furthermore, once the component parts of the project are in place, they will require significant IT resources to support, maintain and develop these clinical solutions over the coming years.

ECCI offers an opportunity for Glasgow to make rapid steps forward in its use of technology for clinical applications, but it also issues a challenge to the way IT is funded and implemented in NHS Greater Glasgow if the benefits of ECCI are to survive and prosper beyond the project's end point of March 2003.



(iv) SYNOPSIS NHS Greater Glasgow Network Review

Introduction

Each of the Glasgow Trusts and each of the GP practices has its own wide area network links implemented to support its individual business priorities. There has been no overall vision or strategy which has led to the current situation of "islands of technology". The first step in network redesign is to understand the business benefits that clinicians could make from making better use of technology and what changes need to be made to the network to allow these benefits to happen.

Clinical Priorities

A visiting technology team undertook a series of discussions with clinicians from across Glasgow in the first quarter of 2002. The identified clinical priorities were:

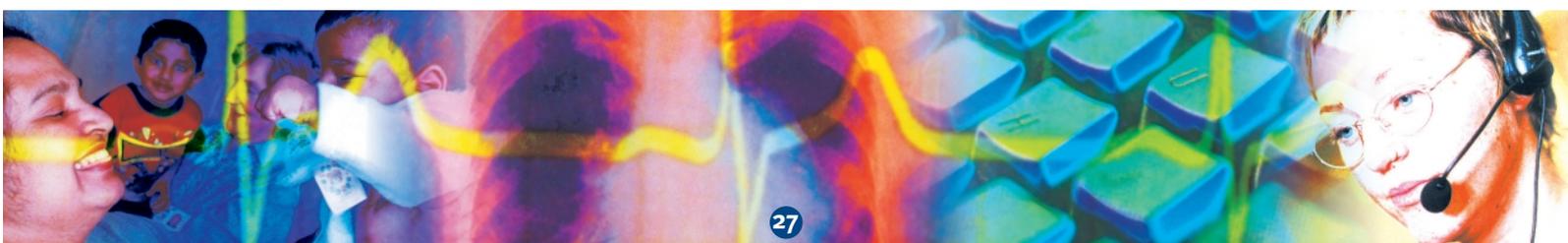
- Improved clinical decisions
- Speeding up patient throughput
- Relieving doctors' hours
- Improving information access for clinical staff
- Reducing mistakes particularly in medicines management
- Increased clinical workstations
- One time recording of information
- Electronic interchange of information with referring hospitals in West of Scotland
- Improved reliability of inter organisation NHS links in Glasgow
- Provide electronic patient and carer access to treatment plans
- Provide public access to health information

Technology

A critical part of an enabling IT infrastructure to support the applications that will deliver the clinical priorities is a high availability, reliable network with sufficient bandwidth to support user requirements whether at a large acute hospital or at a GP surgery. This needs to be capable of supporting existing applications and higher speed developments in image transfer and video.

This strategy and the clinical demands and aspirations which drive it cannot be delivered without significant changes to the network. A new network will incur noticeable increases in costs for network capacity, network hardware and network management:

It is the most important investment decision that we will make and, for this reason, next steps need to be considered with Local Authority Partners.



(v) SYNOPSIS “Change Culture” - Training and Development Strategy

Introduction

Delivering this strategy for NHS Greater Glasgow will bring significant changes to the way people in the service work. The organisation needs to ensure that a structure is in place to support it through these changes to ensure that full benefits of the proposed deployment of ICT are realised.

Approach

The "change culture" approach adopted to support the ICT Strategy should supplement, and integrate with, the existing Organisation Development structures and objectives that are in place. This will ensure a consistent Glasgow-wide approach and strengthen the effectiveness of work progressed.

Each programme of work that is identified in the Glasgow ICT Strategy will be supported by an appropriately resourced Training and Development plan. Initial projects, like those supporting ECCI and Diabetes, will be used to develop a "template" for future projects, so that, in time, change culture and the underpinning training and development needs can be met effectively as a standard objective of all Glasgow-wide ICT projects.

Action Plan

The programme of work described above will be implemented in phases.

- Phase 1** develop training and development plan in support of ECCI referral project
- Phase 2** evaluate and further develop approach and materials for use in other ECCI projects
- Phase 3** evaluate and develop approach for use in full roll-out and document “Change Culture” strategy
- Phase 4** Adopt “Change Culture” strategy in roll-out of Glasgow ICT programme



(vi) SYNOPSIS Joint Futures Projects - Information Sharing Between Local Authorities

Introduction

Joint teams are being formed between NHS Greater Glasgow and the Local Authority Social Services departments. The development of joint working between organisations will require closer integration of working practices.

This has implications for the use of information, how it is made available and how it is stored. A key element of effective joint working is the operation of jointly agreed clinical and administrative protocols including joint assessments. These protocols need to include rules that maintain patient confidentiality and security of information as it is shared between organisations. To achieve effective partnership working, a more integrated approach to information management is required between agencies.

Greater Glasgow PCT and Social Services have set up a number of joint futures IM&T projects. These projects are developing protocols and assessments to support the sharing information securely between organisations involved in the delivery of care.

Priorities

Glasgow City Council

A Shared Assessment IT Project Board has been formed to oversee the following projects in Greater Glasgow. The project board has representation from Social Services, Greater Glasgow PCT and Greater Glasgow NHS Board.

- Shared Assessments
 - Joint Area Learning Disabilities teams*
 - Addictions*
 - Older People's services*
 - Joint equipment stores*
- Access Glasgow
- Implementation of a secure network interconnect between Glasgow City Council and Greater Glasgow Primary Care Trust

West Dunbartonshire

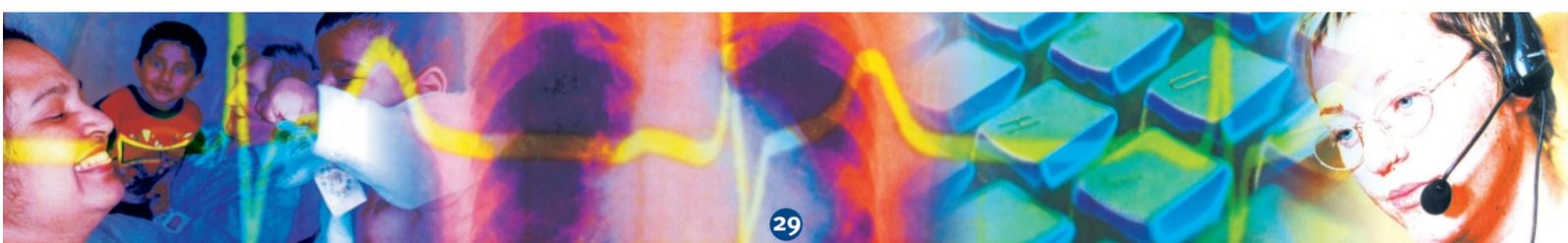
- Shared Assessments
- Older People's services
- Modernising Government Fund bid

East Dunbartonshire

- Modernising Government Fund bid

South Lanarkshire

- Multidisciplinary working Social Work/ Health teams

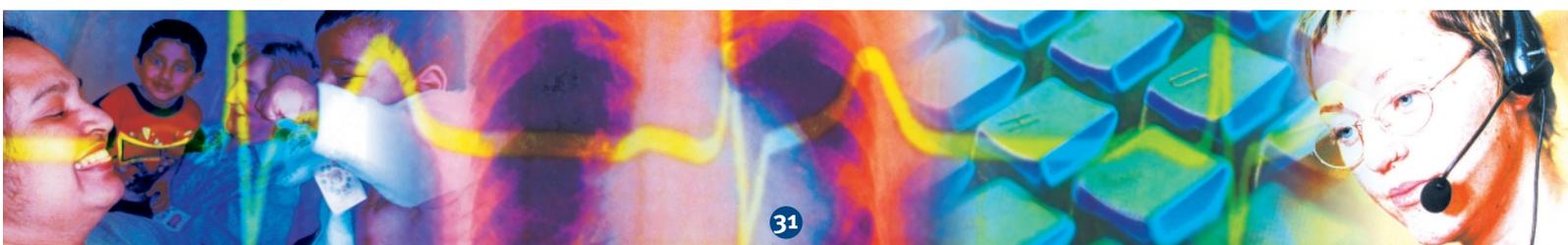


Glossary of Terms

ACAD Hospital	Ambulatory Care and Diagnostic Hospital - new approach to Out-patient care incorporating "one stop" diagnostic and day case treatment.
CHI Number	Community Health Index - Scottish system of uniquely numbering patients.
Diabetes Project	A comprehensive care pathway approach to providing and exchanging patient data between various members of the supporting clinical team.
ECCI	Electronic Clinical Communications Implementation -Scottish pilot projects to develop secure electronic messages between hospitals and GPs for referral and discharge letters, diagnostic results reporting and appointments booking.
EHR	Electronic Health Record - a wider aggregation of care reflecting services provided by hospitals, GPs and Social Care.
eMM	Electronic Medicines Management.
ePrescribing	Electronic Prescribing.
EPR	Electronic patient record - bring together data relating to a particular "episode of care".
ICT	Information and Communications Technology -This strategy is deliberately labelled ICT - it describes the infrastructure required to collect data in the clinical setting and transmit them electronically across the care team. This strategy does not describe how these data will be subsequently analysed nor initiatives to validate and improve data quality.
IM&T	Information Management and Technology
IT	Information Technology
LAN	Local Area Network, electronic network specific to a particular site, e.g. Dalian House or Yorkhill.



NHS 24	National telephone advice helpline service to be introduced across Scotland over next two years.
PACs	Picture Archive Computer System - stores and retrieves digital x-Rays.
Preparedness Index	Self-assessment tool to establish "readiness" to implement locally the National IM&T Strategy across six themes: <i>Use of CHI Number</i> <i>Use of Clinical Information Systems</i> <i>Arrangements for security and confidentiality</i> <i>Provision of public access information</i> <i>IM&T infrastructure</i> <i>People Issues</i>
RIS	Radiology Information system.
Teleradiology	Electronic transmission of digital X-Ray and other images between hospital sites, etc.
WAN	Wide Area Network - electronic network between sites, e.g. Dalian House to Yorkhill.
WOS	West of Scotland







For further details and advice, please contact:

Health Board Director with responsibility for delivering the ICT strategy	Wendy Hull	0141 201 4609 0141 201 4612
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Site-specific

North Trust	Marian Stewart	0141 211 1164
South Trust	Joanne Frame	0141 201 1343
South Trust	Tom McNamara	0141 201 1239
Yorkhill	Brian Gracie	0141 201 0015
Primary Care Trust	Cliff Baister	0141 211 3885

Project-specific

ECCI	Alistair Bishop	0141 201 4994
Network Upgrade	Stephen Harris	0141 211 3799
eMedicines Management	Joanne Frame	0141 201 1343
Teleradiology	Brian Gracie	0141 201 0015
CHI Number	Sylvia Rae	0141 201 8781