

NHS Greater Glasgow & Clyde



NHS BOARD MEETING

William Edwards  
Director of eHealth

16<sup>th</sup> April 2019

Paper No: 19/16

**NHS GG&C – Digital Delivery Plan**

**Recommendation:-**

The Board is asked to note progress since it approved the Digital Strategy 2018 - 2022, Digital as Usual in August 2018.

**Purpose of Paper:-**

The Board approved a Digital Strategy in August 2018 and accepted that is an evolving strategy as it will be further developed in collaboration with the Moving Forward Together (MFT) working groups and with other stakeholders. It was agreed to bring back an initial delivery plan that would outline the areas of focus for the life of the strategy and an associated financial plan.

**Key Issues to be considered:-**

**Any Patient Safety /Patient Experience Issues:-**

Engagement with the MFT programme and stakeholders across our staff and patient groups is an important aspect of the strategy.

**Any Financial Implications from this Paper:-**

The Delivery plan is aligned to available Capital and Revenue resources. The eHealth Directorate receives dedicated funding from Scottish Government eHealth to deliver against local and national strategic aims.

**Any Staffing Implications from this Paper:-**

None at present. Any programme will also be progressed in partnership where staffing implications are identified.

**Any Equality Implications from this Paper:-**

Importance of recognising the needs of all staff and patients when introducing technology across a health care setting. The strategy was subject to an EQIA and the expectation is that individual programmes within will be reviewed.

**Any Health Inequalities Implications from this Paper:-**

A major strand of the strategy is careful adoption of Technology that does not create health inequalities, but strives to support our Health & Care services to develop and redesign to respond to rising demand.

**Has a Risk Assessment been carried out for this issue? If yes, please detail the outcome:-**

No.

**Highlight the Corporate Plan priorities to which your paper relates:-**

Development and implementation of a NHSGGC Digital Strategy.

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## Digital as Usual, the digital strategy of NHS Greater Glasgow and Clyde

### Introduction

In August 2018, NHS Greater Glasgow and Clyde (NHSGGC) Board approved the adoption of a 5 year digital strategy for NHSGGC. The aim of the strategy is to establish a roadmap to support the use of digital technology. The strategy sets out five key focus areas as outlined below which are aligned to the Board’s corporate objectives.

1. Integrated Electronic Health & Care Record – Person centred Healthcare, fit for the modern age
2. Self Care & Remote Care – World class innovation, delivered remotely at the point of care
3. Informatics and Data Analytics – Exploiting data and analytics to improve patient safety and quality outcomes
4. Workforce & Business systems – Empowering people, delivering optimal healthcare
5. Technology Infrastructure – Advancing our future digital landscape today

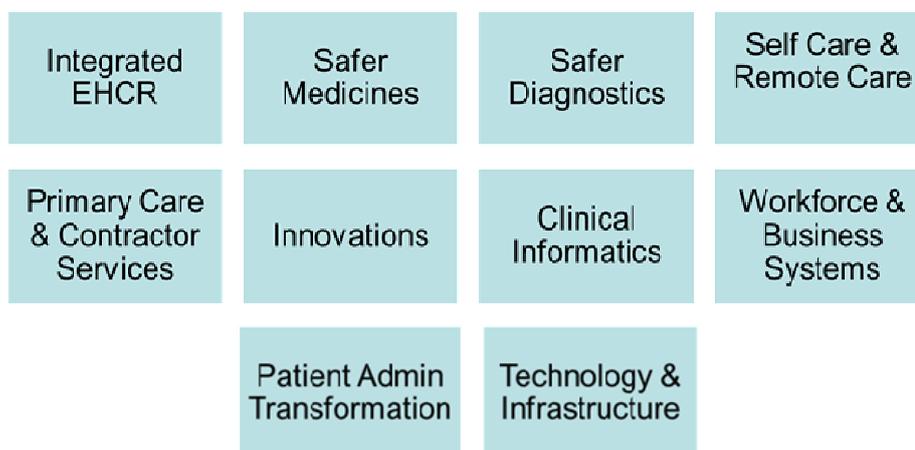
The Delivery Plan is aligned to each of the Board’s Moving Forward Together workstreams to ensure that MFT is supported by the use of digital technology.

This paper updates the Board on progress in developing the delivery plan and associated finance plan as well as providing assurance on continued alignment with the Board’s transformation programmes

### Engagement

Following the Board’s approval of the Digital Strategy and the focus areas, significant stakeholder engagement and consultation has been undertaken to develop the strategy into a comprehensive three year delivery plan. This has been developed, presented and discussed at various forums including the established eHealth governance groups and MFT work streams. The eHealth Strategy Board approved the Delivery Plan and associated Finance plan on 20<sup>th</sup> February 2019.

The Delivery plan has been developed based on a programme management approach. The strategic goals set out in the strategy have been incorporated into the following 10 major programmes of work:



The detailed Plan can be accessed here [Delivery Plan](#). A summary of what has been delivered in 2018/19 and also the major programmes of work for the following 2 years is shown in the tables below.

### Progress on key Programme Deliverables 18/19

<b>Integrated Health and Care Record</b>	
Access to Electronic Health & Care Record (EHCR) widened to HSCP and Community staff	Health and care staff now share and access appropriate health information within the EHCR across GGC. 3 HSCTPs are sharing social care data to the EHCR, the remaining 3 HSCTPs will be implemented during 2019. A pilot to share GP summary data is underway.
COPD Unscheduled Care Pathways	Delivery of digital tools to support workflow and COPD pathways between Acute and Community Services to improve patient monitoring and reduce avoidable admissions.
Maternity Services System (Badgernet)	Implementation of Phase 1 complete, providing an electronic patient record for acute maternity services and community midwives
Regional Clinical Portal	Links between the West of Scotland Regional Clinical Portal and the North of Scotland Clinical Portal now in place and clinician's accessing appropriate clinical EHCR data to support patient care.
TrakCare 2018 Upgrade	Major upgrade of the Board's key patient management system. This will enable new functionality to be implemented during 2019 to support clinicians and administration staff.
<b>Safer Use of Medicines</b>	
Medicines Reconciliation and Immediate Discharge Letter (IDL)	Implementation of a system to support medicines reconciliation within acute and mental health services. This allows the patient's medicines on admission, during an in-patient stay and at the point of discharge to be reconciled and recorded into the clinical record and also the immediate discharge letter which is then electronically sent directly to the GP into the patient's GP record. To date the system has supported 156,000 in-patient pathways and 460,000 medicine reviews.
Hospital Electronic Prescribing & Medicines Administration (HEPMA)	Development of the outline business case for the procurement and implementation of a new HEPMA system.
<b>Safer Diagnostics</b>	
GP Order Communications for Radiology	Implementation completed enabling GP digital ordering of radiology tests. This compliments the existing Laboratory order system.
TrakCare Results Sign Off	Development and implementation of laboratory results sign off functionality within TrakCare. Focus for 2019 will be to support clinicians in the use of the system.

Digital Pathology	Pilot and early implementation. Delivering a national digital pathology image repository for research. This will include the ability to store images that have been annotated by pathologists to train the AI software and effectively recognise and triage pathology samples.
<b>Primary Care &amp; Contractor Services</b>	
GP IT Procurement	GG&C have contributed significantly to the National project to procure new GP IT system to support Primary Care. Framework now in place.
Ophthalmology Electronic Patient Record System	GG&C lead the full business case development to procure and implement a new EPR system which will be available to all NHS Boards in Scotland. Awaiting formal consideration.
<b>Self Care and Remote Care</b>	
Remote consultations	Introduction of video and telephone consultations within a prioritised number of services within GGC and also a number of clinics in Argyle & Bute. This will allow patients and clinicians to hold outpatient appointments using simple video technology reducing the need to travel to appointments where this is not necessary. Pilots were completed earlier in 2019 and patient and clinician feedback was positive. The focus for 2019 is to work with services to identify appropriate clinics and support clinicians and patients in the use of technology. Telephone consultations are also within scope.
Advice Referrals	Following a number of pilots implementation of advice referrals commenced in 2018/19. This enables GPs to seek advice from a specialist clinician in order to determine if an outpatient appointment is necessary or to arrange tests prior to an appointment.
<b>Innovations</b>	
Innovation projects	A number of new innovation projects commenced during 2018/19 and will be progressed during the next 2-3 years. <ul style="list-style-type: none"> <li>• SBRI funded project piloting a new type of dermatology virtual clinic conducted electronically with the patient.</li> <li>• A tablet based app for data collection and clinical support during trauma incidents.</li> <li>• Innovate UK funding to enhance home care capabilities for COPD patients and reduce hospital re-admissions. Allows clinicians to remotely monitor and treat patients</li> <li>• Industrial Centre for Artificial Intelligence</li> </ul>

	<p>Research in Digital Diagnostics (iCAIRD) – A major programme to develop a platform that will develop software to train and test machine learning algorithms for image analysis. The programme will develop a method of delivering this output to clinicians and will also support the introduction of a Digital Pathology system within NHS GG&amp;C. This is a partnership with NHS Grampian, University of Glasgow, University of Aberdeen and several health technology companies. Aside from the platform, deliverables include Artificial Intelligence exemplars to improve Emergency Dept Chest X-Ray &amp; Rapid Diagnosis of Stroke.</p>
Health & Social Care Digital Platform	<p>Digital platform was developed by NHS GG&amp;C in response to a Scottish Government commission to provide a Patient Portal. Following development and implementation a business case was produced by GG&amp;C for NHS Scotland wide implementation and submitted to the Scottish Government eHealth Directorate. The digital platform and learning is now in the process of being transitioned to the new national digital platform which is being developed by the National Digital Service within NES.</p>
<b>Patient Admin Transformation</b>	
Patient self-check in kiosks	<p>Introduced to West Glasgow and Stobhill ACH as part of measures to improve efficiency of outpatient reception and to support queue management. Enables patients to locate their appointment on a digital kiosk and check in for their appointment notifying relevant staff that they have arrived.</p>
Single structure for patient administration staff and career development framework	<p>Management of ward clerk resources for all sites will transfer to a single structure under the management of Health Records / eHealth . A single management structure for other patient administration staff within acute services is being developed with eHealth leading. This will enable staff to be supported in the standardised use of technology and administration processes. A career development framework has been developed in partnership alongside new standardised job descriptions.</p>
<b>Workforce and Business Systems Programme</b>	
eEES system implemented – Phase 1	<p>Introduced Phase 1 of eESS creating an electronic staff record to improve workflow, reduce manual processes and data entry duplication.</p>
Office 365	<p>National business case approved. Software</p>

	tested in NHSGGC and roll out programme has commenced, creating a blueprint for implementations across NHS Scotland Boards. Providing modern, up to date office tools with enhanced communication facilities including online desktop conferencing and ability to use collaborative tools to share information.
Estates and Facilities Action Plan	Work Plan agreed with Estates and Facilities to implement technology solutions to support operational managers and service delivery.
<b>Technology and Infrastructure</b>	
Cyber Security improvement plan implemented	Cyber Essentials Plus accreditation achieved and standards being maintained. A number of initiatives including progressing assurance in line with the Public Sector Action Plan have been completed.
Data centre consolidation	Consolidated services into modern resilient data centre completed. Significant work to transfer technical services onto new platforms and futureproof.
Planned computer device replacement programme.	Business case and capital funding secured to commence a rolling programme of device replacement. A total of 35,000 computer devices across the estate will be upgraded or replaced over the next 4 years to ensure that access and use of clinical and administrative systems is efficient and robust.
Telecommunications systems improvement plan	Major upgrade to acute telephony environment. Transition to digitally enabled telecoms infrastructure improving resilience. This upgrade includes technology to support 45,000 desktop handsets, 16,000 mobile phones and 1,700 wireless phones.

### Major Programme Deliverables 2019/20 – 20/21

<b>Integrated Health and Care Record</b>	
<b>2019/20</b>	<b>2020/21</b>
Provide enhanced access to Electronic Health & Care Record including GP summary data and improved user experience by redesign of front end screens	Further enhanced data set and access for Primary Care practitioners
Development and implementation of digital integrated Anticipatory Care Plans (ACPs) to support patient pathways across health and care	Implementation of digital integrated Anticipatory Care Plans (ACPs) to support patient pathways across health and care
Development and implementation of eForms to support new pathways and workflow across integrated teams	Implementation of eForms to support new pathways and workflow across integrated teams
Development digital tools to support	Implementation of tools to support nursing

digital recording of nursing notes nursing and documentation for inpatient data recording	documentation and inpatient data recording. Reduction in the need for scanning paper records
Pilot of new system to support district nursing service	Implementation of new system to support district nursing service
New TrakCare functionality including Active Clinical Notes, National Early Warning Scores (NEWS) and the Glasgow Admissions Prediction Score (GAPS), mobile use and electronic death certification. Improving digital data recording and enhancing the EHCR and supporting clinicians working on a mobile and agile basis	Further implementation of new TrakCare functionality including review of regional capability
eObservations business case to support the procurement and implementation of a clinical system for recording and reporting in patient observations	Implementation of eObservations system subject to business case
Development of digital tools to support the recording and reporting of allergies and alerts in line with board wide policies	Implementation of tools to support recording of allergies and alerts enhancing patient safety.
Maternity System Phase 2, providing CTG Interface, enhanced reporting and enabling patient access to information leaflets, appointments and letters	
<b>Safer Use of Medicines</b>	
<b>2019/20</b>	<b>2020/21</b>
Hospital Electronic Prescribing & Medicines Administration (HEPMA) procurement. Subject to business case approval, planning and configuration of new system	Implementation of HEPMA across all acute wards and mental health wards
<b>Safer Diagnostics</b>	
<b>2019/20</b>	<b>2020/21</b>
New Laboratory Information System (LIMS) subject to business case approval, procurement of new system	Implementation of new LIMS system
Further implementation of Digital Pathology	Evaluation of digital pathology implementation in line with national business case
New Order Communications system for sexual health and community teams	Replacement PACS radiology system in line with national programme
<b>Primary Care &amp; Contractor Services</b>	
<b>2019/20</b>	<b>2020/21</b>
CHI replacement programme, national programme to replace current CHI system with new functionality which will support modern application systems and integrated services	Implementation of new CHI system across NHS Scotland
Child Health, national programme to	Implementation of new child health systems

replace current outdated systems	across all Boards. Integration with Board's EHCR systems and data sharing arrangements
GP IT System, preparation and planning for implementation of new GP IT systems & hosting options for GP practice local data	GP IT implementations commence across all Practices
<b>Self Care &amp; Remote Care</b>	
<b>2019/20</b>	<b>2020/21</b>
Scale up implementations of remote consultations across 7 priority services including Respiratory, Rheumatology, Diabetic, Dermatology, Neurology and BWoSCC and Orthopaedics plus a range of MFT projects.	Further implementations of remote consultations across all relevant services. Target to achieve 20% of clinic appointments, where appropriate to be undertaken using telephone or video technology
Advice referrals scale up implementations in line with national Active Clinical Referral Triage (ACRT) programme. Use of SCI Gateway referrals process to enable clinician to seek advice, reducing the number of outpatient appointments	Enhanced advice referrals to support test requests and use of clinical guidelines and clinical decision support alongside advice requests. Use of digital tools to support clinical dialogue across integrated clinical teams
Programme of Technology Enabled Care initiatives with HSCPs including blood pressure remote monitoring, COPD monitoring and frailty	Implementation of remote monitoring tools and integration of data into EHCR and enhanced data analytics
<b>Innovations</b>	
<b>2019/20</b>	<b>2020/21</b>
West of Scotland Digital Hub to be based at the QEUH to support NHSGGC innovation projects including COPD and Trauma App and also other WoS projects.	Continued innovation programme and review of outcomes from innovation projects to establish scaled up implementations.  Continue to position GG&C as an attractive proposition for innovation funding grants
Artificial Intelligence (AI) pilots including opportunities for machine learning and automation within referral management, clinical coding and laboratory results sign off processes	Implementations of AI projects following reviews of pilots
Industrial Centre for Artificial Intelligence Research in Digital Diagnostics – (iCAIRD) programme including implementation of software to support machine learning and artificial intelligence work packages	Continued implementation of iCAIRD 3 year programme
<b>Clinical Informatics &amp; Data Analytics</b>	
<b>2019/20</b>	<b>2020/21</b>
Development of a Clinical Informatics strategy and workplan. Implementation of technologies to include support for patient cohort management, decision support and new service models	Implementation of technologies in line with Clinical Informatics workplan. Focus on integration of analytics and decision support for clinical workflows including data relating to diagnostics and prevention.

<b>Patient Administration Transformation</b>	
<b>2019/20</b>	<b>2020/21</b>
Complete single management structure implementations and establish agreed career framework. Key projects to support and standardise the use of technology	
<b>Workforce &amp; Business Systems</b>	
<b>2019/20</b>	<b>2020/21</b>
Dashboards to support Estates and Facilities operational management teams	Strategic workplan to support Estates and Facilities services
Datix system replacement	Implementation of Datix system
Decontamination system 1 <sup>st</sup> phase systems replacement subject to business case	Implementation of decontamination system modules
Digital training and support plans to ensure that clinical and administrative staff are equipped with the knowledge and skills to use digital tools effectively	Progress digital training and support plans to include undergraduate medical trainees, links with universities and also post grad tutors
New dental system procurement and implementation into acute dental services, providing new dental EPR	Integration of dental EPR data into Clinical Portal and develop plans for enhanced access for primary care practitioners
Major Theatre system upgrade. Business case for additional modules including anaesthetics and materials management	Implementation of additional modules subject to business case approval
Portering system replacement in line with national programme	
<b>Technology &amp; Infrastructure</b>	
<b>2019/20</b>	<b>2020/21</b>
Device replacement programme and upgrades of Microsoft operating systems. Essential replacement of aging and obsolete desktop and laptop computers. 4 year programme to ensure business continuity	Device replacement programme, ongoing upgrades and compliance
Implementation of secure data storage for genetics and digital pathology	
Service Desk transformation programme	Regional opportunities for eHealth service desk in the West of Scotland
West of Scotland Regional eHealth single system working review including eHealth service management to support core clinical systems and service desk arrangements	Implement agreed recommendations from the WoS eHealth single system working review
Telephony transformation programme, extension of IP digital telephony to replace older, analogue technologies.	Telephony transformation programme continues including integration with core Microsoft technologies

## Finance Strategy

By way of context, the eHealth Directorate employs circa 1170 WTE staff including almost 900 staff in Health Records Services, 80 staff in Telecoms and over 190 staff in IT and Information Services with a revenue budget of approximately £66.35m in financial year 2018/2019.

This total includes recurring and non-recurring funding. In previous years, funding was principally as set out in the table below:

	<b>FY 18/19</b>
<b>Recurring Funding</b>	
NHSGGC rollover pay budget	£38.69m
NHSGGC rollover non-pay budget	£20.56m
In year recurring adjustment	£0
	<b>£59.25m</b>
<b>Non Recurring Funding</b>	
SG eHealth Strategic Fund allocation	£4.8m
SG Application & Infrastructure Funds (IPACC)	£1.9m*
Other NR funding	£1.4m
CRES Savings	-£1.0m
	<b>£7.1m</b>
<b>TOTAL</b>	<b>£66.35m</b>

The strategic fund is allocated by Scottish Government in order to deliver the key strategic aims of the National eHealth Strategy.

The Applications & Infrastructure Fund is largely a transaction with NSS to fund the Board's contribution towards national shared infrastructure and systems. For 2018/19 Scottish Government held the Application and Infrastructure funds centrally except for the IPACC element of the Infrastructure fund of £1.9m

The 18/19 the Strategic fund has been reduced by 5% from Scottish Government. The allocation in 2018/19 was £4.8m which equals a reduction of £251k on the 2017/18 allocation of £5.08m. There could be a further reduction of 5% applied in 2019/20 however at this stage this has not been formally communicated.

The eHealth Director has concluded a baseline review of the eHealth Directorate cost centre for full years 2018/2019 and 2019/20 to understand risks and opportunities. This exercise has been concluded and as updated to the Finance & Performance committee an additional 2.2m funding has been agreed principally to support inflationary uplift.

The financial position for 2019/20 estimated to be as set out in the table below. It should be noted that the table below outlines budget vs costs and demonstrates the contribution of the strategic fund allocation from Scottish government in underpinning staff and core EPR products to support our strategic direction.

Description 19/20	Budget £000's	Cost £000's	Variance £000's
Estimated Pay Position	39,439	40,733	(1,294)
Estimated Non Pay Position	25,893	26,279	(386)
Sub Total Position	65,332	67,012	(1,680)
Scottish Government Strategic Fund	4,807	3,677	1,130
Other Non-Recurring allocations	550	0	550
Final Position	70,689	70,689	0

Additionally, a Financial Plan, utilising Strategic and Capital fund allocations, has been developed to support the delivery of the 10 major programmes as set out below.

#### Digital as Usual Financial Plan 2019/20

Programme	Strategic Funding (eHealth) £ '000	Capital Funding (eHealth) £ '000	Other Funding Sources £ '000
01 Integrated EHCR	893	-	325
02 Safer Use of Medicines	1,205	1,829	2,100
03 Safer Diagnostics	65	330	10
04 Primary Care and Contractor Services	175	-	425
05 Self Care and Remote Care	133	-	162
06 Innovations	100	-	1,135
07 Clinical Informatics & IG	347	-	-
08 Patient Administration Transformation	-	-	-
09 Workforce and Business Systems	430	-	1,585
10 Technology and Infrastructure	148	5,450	-
11 Clinical Leads	181	-	-
<b>Total</b>	<b>3,677</b>	<b>7,609</b>	<b>5,742</b>

**Digital as Usual Financial Plan 2020/21**

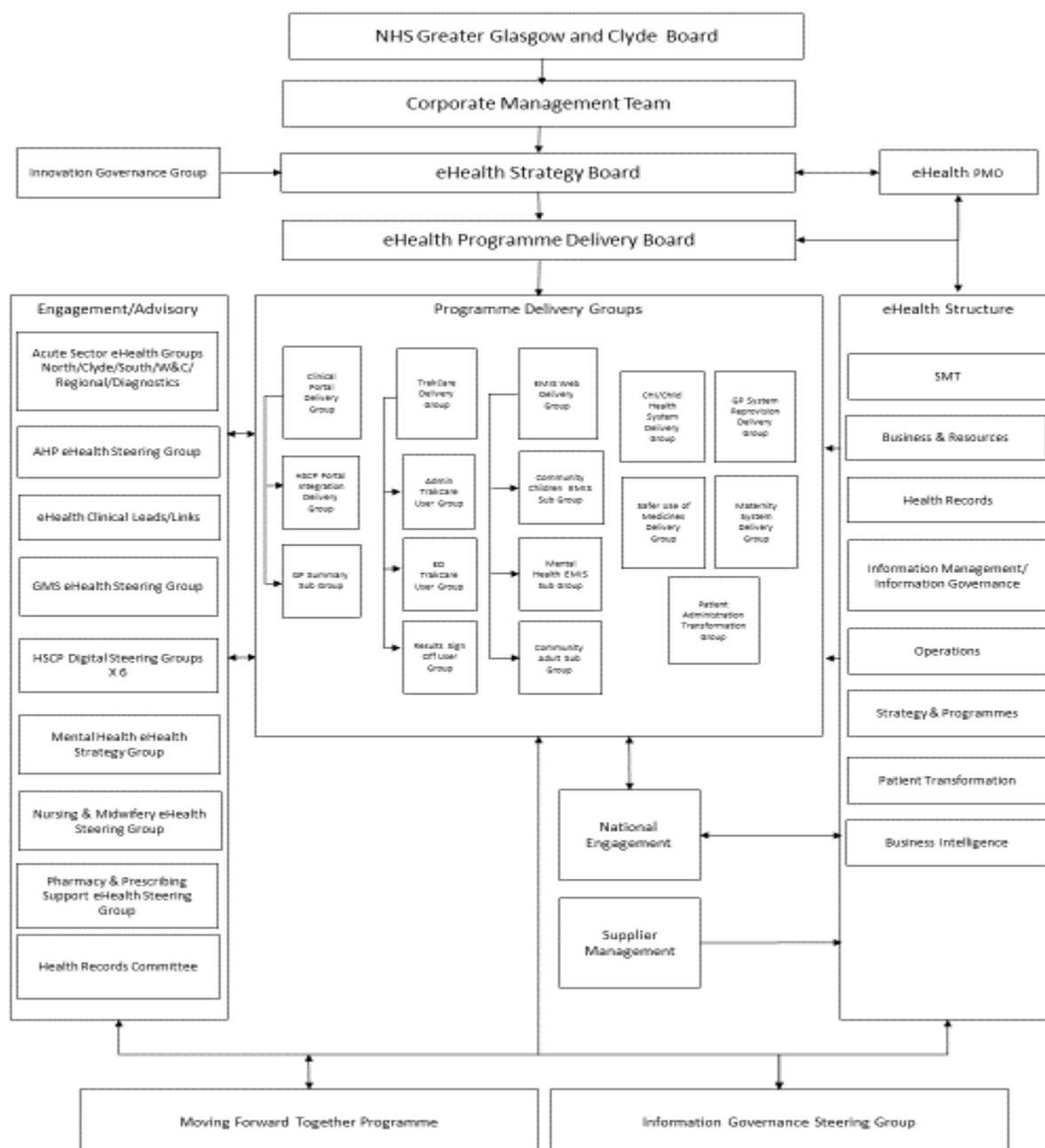
<b>Programme</b>	<b>Strategic Funding (eHealth) £'000</b>	<b>Capital Funding (eHealth) £'000</b>	<b>Other Funding Sources £ '000</b>
01 Integrated EHCR	1,154	-	-
02 Safer Use of Medicines	940	-	1,620
03 Safer Diagnostics	-	2,860	-
04 Primary Care and Contractor Services	600	-	500
05 Primary Care and Contractor Services	200	-	-
06 Innovations	-	-	585
07 Clinical Informatics & IG	275	-	-
08 Patient Administration Transformatin	-	-	-
09 Workforce and Business Systems	300	-	-
10 Technology & Infrastructure	50	4,000	-
11 Clinical Leads	181	-	-
<b>Total</b>	<b>3,700</b>	<b>6,860</b>	<b>2,705</b>

## Governance

A robust governance process is in place to oversee the implementation of the Digital Strategy Delivery Plan and to ensure that programmes continue to reflect service requirements in line with MFT work streams and other stakeholders.

Each MFT work stream includes representation from an eHealth Clinical Lead and also a senior member of the eHealth Strategy & Programmes Team.

The diagram below shows the existing eHealth governance groups. The eHealth Strategy Board is the overarching governance group responsible for ensuring the delivery of the Digital Strategy. The eHealth Strategy Board is chaired by the Deputy Medical Director and includes senior representation from all key stakeholder groups.



## **Alignment with Scottish Government Digital Strategy**

The NHSGGC Digital Strategy and Delivery Plan is aligned with the national NHS Scotland Digital Health & Care Strategy.

Within the national Digital Health & Care Strategy domain E sets out plans to develop and implement a new 'national digital platform' through which relevant real-time data and information from health and care records will be available to those who need it. The platform is currently being developed by the National Digital Service hosted within NES.

The new digital platform will provide the necessary technology to support a range of requirements set out in the NHSGGC Digital Strategy including patient access to their records and patient interaction on a digital basis with health and care services. This was previously demonstrated during 2018 when NHSGGC were commissioned by the Scottish Government eHealth Directorate on behalf of the West of Scotland Boards to develop a Patient Portal and associated digital platform. The Patient Portal was developed and piloted and a business case for implementation across Scotland was submitted to the Scottish Government. The digital platform in NHSGGC is currently being transitioned to NDS to support the development of the national digital platform.

A roadmap and delivery plan for NDS is in the process of being developed.

## **Risks**

A risk based approach is applied to all programme documentation and reporting managed and escalated through the eHealth Programme Management Office and through eHealth and Board governance groups as appropriate. A directorate risk register is reviewed by the eHealth Senior Management Team on a regular basis.

## **Development of a Monitoring Framework**

A fully developed monitoring framework will be managed by the eHealth governance groups and overseen by the eHealth Strategy Board and CMT on a quarterly basis.