NOT PROTECTIVELY MARKED

Private Board Meeting	**March 2019** **Item No 11**
THIS PAPER IS FOR APPROVAL **eHEALTH ICT STRATEGY REFRESH**	

Lead Director **Author**	Julie Carter, Director of Finance & Logistics John Baker, General Manager, ICT

Action required	The Board is asked to
	   1. Approve the eHealth ICT Strategy Addendum Document
	   2. Note the work required during 2019 & 2020

Key points	The current eHealth ICT Strategy was approved by the Board in March 2016. It covers the period 2016-2020;
	
	  • A mid-term refresh was due in 2018;
	  • Work to review the current strategy took place from June 2018 through to February 2019;
	  • The review was essentially a 'stock-take' and it resulted in the addendum document presented for approval;
	  • The outcome of the stock-take shows that:
	     ○ 4 of the 6 targets set have been met or are on track;
	     ○ 53% of planned activities have been completed or are on track with 41% delayed or delivered late;
	     ○ A number of significant priority projects have emerged since March 2016;
	     ○
	The proposed way forward is a three stage approach:
	     ○ Stage 1 (2019-20) – *'Continue and Consolidate'*
	     ○ Stage 2 (2019-20) – *'Prepare to develop and Deliver'*
	     ○ Stage 3 (2021-30) – *'Deliver our Digital Future'*

Timing	The paper is scheduled to be presented to the Board in March 2019.
Link to Corporate Objectives	ICT supports all of the Corporate Objectives in one way or another. Those that the strategy has direct links with are: and 6.3. 1.3 - Enhance our telephone triage and ability to see and treat more patients at home through the provision of senior clinical decision support.

	2.4 - Develop our mobile telehealth and diagnostic capability. 3.1- Lead a national programme of improvement for out of hospital cardiac arrest. 4.2 - Continue to develop our scheduled care service in partnership to support outpatient services and facilitate effective discharge and transfer to improve patient flow, and deliver a better experience for patients. 6.3 - Invest in technology and advanced clinical skills to deliver the change.
Contribution to the 2020 vision for Health and Social Care	It is essential that the Service has access to ICT services to meet current demand in an efficient and effective manner and thereby improve patient safety and care. There is also a requirement for the Service to be able to communicate with, collaborate with and share information with NHS, emergency service and other partners, this is underpinned by ICT. Mobile technology is also a crucial element in safeguarding the security and safety of frontline staff. The strategy fully aligns with the NHS Scotland Quality Strategy, the 2020 Vision, the Digital Health and Care Strategy and the Service's strategic framework Towards 2020: Taking Care to the Patient. It is underpinned by five principles: • Reduce Risk (Increase Safety) • Increase Effectiveness and Sustainability • Provide Value for Money • Digital First • Enable Innovation In terms of the 2020 vision and the 12 Priority areas for improvement, relevant areas include: • Unscheduled and Emergency Care • Innovation • Efficiency and Productivity
Benefit to Patients	The main benefit for patients is that the strategy outlines how the Service plans to ensure that staff continue to have access to eHealth & ICT systems and solutions that enable them to provide health care that is as effective and efficient as possible. This involves enhancing existing systems and services as well as identifying and introducing new ones. The strategy is designed to cater for current and future ICT / Digital requirements. There is no doubt that patients currently benefit from the efficiency and effectiveness gains provided by existing ICT services. Although patients may not be directly aware of these benefits, they receive care that is more timeous, safer and more cost effective as a result of ICT services.

Equality and Diversity	The Equality Impact Assessment (EQIA) that has been carried out shows that no adverse impact or potential for discrimination has been identified at this time and that opportunities to promote equality have been taken where they have been identified. The actual impact of the eHealth ICT Strategy will be monitored during the period covered as required. A copy of the completed EQIA summary template. **Positive - Disability** - On the new ambulance tablets, staff have the ability to zoom into text on the tablet where appropriate. Printouts will be in larger font and will be more legible. A spellchecker will be included in the ePR software; - The telehealth tablet can provide access to new apps e.g. for interpreting services; - - Support for the needs of Service users, e.g. adjustments to hardware or software for accessibility; - Additional contact channels are likely to aid accessibility - New PTS mobile data system is likely to have a positive impact in terms of decision support. **Opportunities to enhance equality** External access to more systems will support more flexible, agile equitable methods of working for all staff. The eHealth ICT Strategy addendum continues the Service commitment to ensuring that all eHealth ICT systems and services are designed and operated so that individuals with one or more of the specific protected characteristics highlighted above are not treated differently. This includes new, existing and modified eHealth ICT systems. In addition, reasonable adjustments will continue to be made as required. ECS / KIS interfaces enable quick access to the Emergency Care Summary and key Information Summary which will help us deliver better patient care e.g. end of life wishes etc. - The transfer of patient information between Schedule & Un-Scheduled Care systems reduces the need to ask patients similar information again, particularly when details relate to the patient's disability; - There is the potential for increased levels of treatment at the point of care, reducing the need for conveyance to A&E and reducing potential stress levels for patients who may otherwise have been removed from their home environment for treatment.

eHealth ICT Strategy 2016 - 2020

(Addendum to 2016-2020 eHealth ICT Strategy)

Scottish Ambulance Service Board

eHealth ICT Strategy 2019-2020

Document Ownership and Approval

Recommending Committee:	Scottish Ambulance Service Executive
Approving Committee:	Scottish Ambulance Service Board
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Planned Review Date:	Q2 2020 (New 'Digital' Strategy to be published by March 2021)
Responsible Executive:	Director of Finance & Logistics
Responsible Manager:	General Manager, Information and Communications Technology
For Use By:	All Service Staff

Scottish Ambulance Service Board

eHealth ICT Strategy 2019-2020
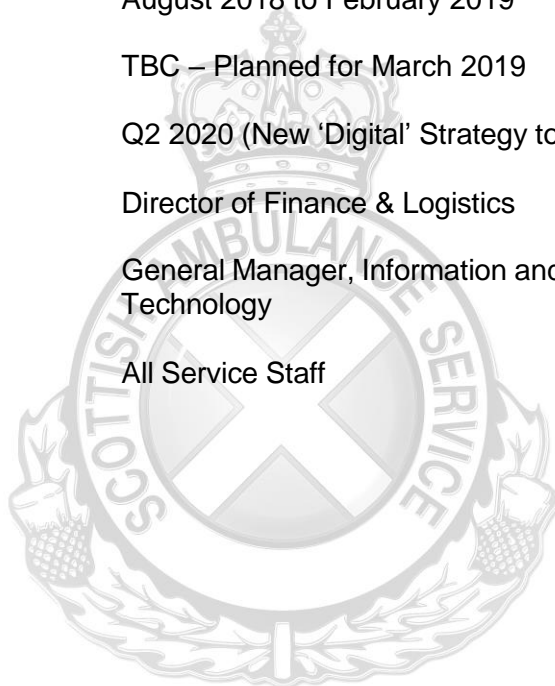
Document Change Control

Document Reference: eHealth ICT Strategy 2019-2020
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Reference Documentation - Scottish Ambulance Service:

- Strategic Framework: Towards 2020 Taking Care to the Patient
- eHealth ICT Strategy 2016-20
- Information Governance Strategy 2018
- Strategic Workforce Plan 2015-20
- Corporate Priorities 2018-19
- Corporate Priorities 2019-20 (draft)
- Clinical Response Model Report

Reference Documentation – External:

- NHS Scotland Healthcare Quality Strategy
- Scottish Health Council - Our Voice Citizen's Panel - Third Survey Report – January 2018
- Scottish Government Digital Health & Care Strategy
- Scottish Government Health and Sport Committee Report on 'Technology & innovation in health & social care'
- Scottish Government Network Information Systems (NIS) Framework
- Scottish Government Cyber Resilience Strategy for Scotland
- Scottish Government Cyber Resilience Public Sector Action Plan
- Scottish Government Digital Strategy for Scotland
- University of Stirling Response Model Report
- NHS GG&C Digital Strategy
- NHS England National Ambulance Digital Strategy
- NHS England report on Operational Performance and Productivity in NHS England Ambulance Trusts
- NHS England report on Preparing the healthcare workforce to deliver the digital future

Change Record

Date	Version	Author(s)	Description and Change Record
4th March 2019	0.1	John Baker and Mark Christie	Initial draft compiled
8th March 2019	Final Draft	John Baker	Revised following feedback from Julie Carter

Distribution Record

Date	Version	Recipient(s)	Comments

Contents

Foreword

The Scottish Ambulance Service never stops; it is continuously evolving. When I wrote the foreword for the current eHealth ICT Strategy in late 2015, our Strategic Framework *"Towards 2020: Taking Care to the Patient"* had only been in place for a few months. Just over three years later, in March 2019, work is well underway to develop our next Strategic Framework which will set our direction through to 2030.

That said, the current Strategic Framework sets out a number of strategic aims that are still valid today;

By 2020 the Service aims to:

- *Improve access to healthcare;*
- *Improve outcomes for patients – specifically cardiac, trauma, stroke, mental health, respiratory, frailty and falls;*
- *Evidence a shift in the balance of care by taking more care to the patient;*
- *Enhance our clinical skills as a key and integral partner working with primary and secondary care;*
- *Develop our Service as a key partner with newly formed Integration Boards;*
- *Collaborate with other partners including the voluntary sector and the other blue light emergency services as part of a contribution to shared services and public service reform;*
- *Build and strengthen community resilience;*
- *Expand our diagnostic capability and use of technology to improve patient care; and*
- *Develop a more flexible, responsive and integrated scheduled Patient Transport Service.*

Above all else, the Scottish Ambulance Service continues to build on its capability to deliver consistently high quality evidence based care to our patients.

Now, more than half way through our eHealth ICT strategy implementation, this document describes the outcome of a 'stock-take' exercise that was carried out during 2018 to review the current corporate context and the progress made towards delivering the targets and planned activities set out in 2016.

The graphic below provides a high level overview of the three stage approach we will now progress as a result of this review:

Stage 1 (2019-20)	Stage 2 (2019-20)	Stage 3 (2021-30)
Continue and Consolidate Complete ongoing projects Deliver new priority projects	**Plan and Prepare for the Future** Develop our digital vision and strategy to 2030 including key milestones, checkpoints and deliverables	**Deliver Our Digital Future** Deliver our vision including appropraite checkpoint reviews
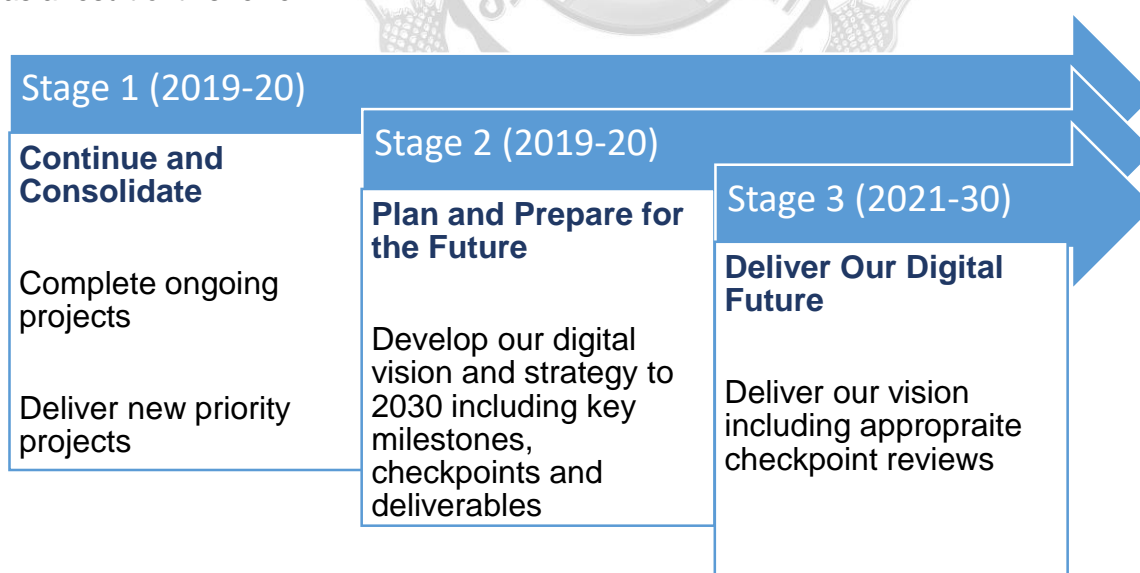
I am confident that the current eHealth ICT Strategy, augmented by this addendum document, provides the required level of strategic direction and focus to see us through to the end of 2020 and prepare us for the next stage of our digital future

John Baker - General Manager, Information and Communications Technology

1- Introduction

Introduction

This document has been produced in line with the commitments made in the current Scottish Ambulance Service eHealth ICT Strategy which was published in March 2016 and which stated that a mid-term refresh would be carried out during 2018. This is not intended to be a stand-alone strategy document in its own right; it is, in essence, a 'stock-take' and has been prepared as an addendum to the current Scottish Ambulance Service eHealth ICT Strategy 2016-20. This is reflected in the relatively short 2-year timeframe it covers.

Work on this stock-take started in summer 2018 with an increase in focus and activity from December 2018. This work includes consultation and environmental scanning. Groups consulted include:

- The Senior Leadership Team;
- The Operational Management Team;
- The Ambulance Control Centre Senior Management Team;
- The Executive Team;
- The Scottish Ambulance Service Board.

In terms of environmental scanning, this includes but is not limited to:

- Internal - Scottish Ambulance Service;
- NHS Scotland;
- Scottish Emergency Services;
- Scottish Public Sector;
- GB Ambulance Trusts;
- NHS England.

Having 'taken stock' and assessed the various options, it was concluded that a three stage approach is required:

Stage 1 – *'Continue and Consolidate'*

As outlined in Section 4 of this document, many initiatives and projects have been completed. However, it is clear that there is still significant work to be done to deliver the vision outlined in the current strategy document. In addition, there are numerous significant initiatives and projects that have emerged since the strategy was published in 2016.

There will therefore be a period of consolidation covering 2019 and 2020 as outlined in Section 5. The aim being to complete as many priority projects as possible in order to establish a solid foundation to build from during Stage 3 and be ready for the next stage of our digital journey.

Stage 2 – *'Plan and Prepare for the Future'*

In addition to consolidation, the period to 2021 will involve planning and preparing for the future. This will involve two high-level objectives; the first is to continue environmental scanning and consultation with a view to developing a new Scottish Ambulance Service Digital Strategy by Q1 2021. The second being to work with relevant stakeholders to define, identify and secure the resources and structures required to both produce, and deliver, the new Digital Strategy.

Stage 3 – '*Deliver our Digital Future'*

Stage 3 involves defining a plan with clear milestones; resource requirements; a benefits management strategy and a clear vison of how we will deliver our Digital ambitions.

2 - Strategic Context

NHSScotland currently employs approximately 140,000 staff across 21 Scottish health boards. The Scottish Ambulance Service is a national NHS Board, it responds to around 1 million calls for emergency and non-emergency assistance each year and attends nearly 650,000 unscheduled care incidents. Of these, over 520,000 are emergencies. We transfer around 50,000 patients between hospitals each year and respond to around 120,000 urgent requests for admission, transfer and discharge from GPs and hospitals.

Our air ambulance service undertakes thousands of missions annually and we co-ordinate delivery of the ScotSTAR Specialist Transport and Retrieval Service for Scotland which transfers the most seriously ill patients for specialised treatment.

Our Patient Transport Service takes over 660,000 patients to and from scheduled hospital appointments each year.

We employ over 4,750 staff and we operate across mainland Scotland, and its island communities, to support the other NHSScotland Health Boards. We are assisted by around 1000 volunteers working in roles such as community first responders.

Full details of the strategic context within which the Service operates were outlined in the section 2 of the eHealth ICT Strategy 2016-20 published in 2016. The focus here therefore, is on key areas that have remained the same as well as any key changes since then.

What has remained the same?

Two fundamental underpinning documents have been in place since before March 2016 when the current strategy was published. These are the Scottish Government Healthcare Quality Strategy for NHS Scotland and the Scottish Ambulance Service Strategic Framework "Towards 2020: Taking Care to the Patient".

Healthcare Quality Strategy for NHSScotland

In 2010, the Scottish Government published its Healthcare Quality Strategy for NHSScotland which articulated three quality ambitions:

1. Mutually beneficial partnerships between patients, their families and those delivering healthcare services which respect individual needs and values and which demonstrate compassion, continuity, clear communication and shared decision-making;
2. There will be no avoidable injury or harm to people from healthcare they receive, and an appropriate, clean and safe environment will be provided for the delivery of healthcare services at all times;
3. The most appropriate treatments, interventions, support and services will be provided at the right time to everyone who will benefit, and wasteful or harmful variation will be eradicated.

These three Quality Ambitions provide the focus for all NHSScotland activity to support the aim of delivering the best quality healthcare to the people of Scotland and through this making NHSScotland a world leader in healthcare quality. These ambitions explicitly reflect the things people have told the Scottish Government they want and need and are based on the internationally recognised six dimensions of healthcare quality from the Institute of Medicine: Person-centered, Safe, Effective, Efficient, Equitable and Timely. The following figure illustrates these six dimensions:

Institute of Medicine - *six dimensions of healthcare quality*

Scottish Ambulance Service Strategic Framework

The Scottish Ambulance Service Strategic Framework "Towards 2020: Taking Care to the Patient" was published in February 2015. It sets out a range of commitments for continuous development of our services, which are both aspirational and ambitious; by 2020 the Service aims to:

- *Improve access to healthcare;*
- *Improve outcomes for patients – specifically cardiac, trauma, stroke, mental health, respiratory, frailty and falls;*
- *Evidence a shift in the balance of care by taking more care to the patient;*
- *Enhance our clinical skills as a key and integral partner working with primary and secondary care;*
- *Develop our Service as a key partner with newly formed Integration Boards;*
- *Collaborate with other partners including the voluntary sector and the other blue light emergency services as part of a contribution to shared services and public service reform;*
- *Build and strengthen community resilience;*
- *Expand our diagnostic capability and use of technology to improve patient care; and*
- *Develop a more flexible, responsive and integrated scheduled Patient Transport Service.*

As 2020 approaches, work is well underway to develop the next Strategic Framework which is likely to set the direction through to 2030. The Scottish Ambulance Service Digital Strategy developed as part of 'Stage 2', will align closely with and will fully support this new framework. Indeed, a co-production model will be considered to assess the case for developing the two documents together.

What has changed?

Although some of the key underpinning strategic documents have remained unchanged since 2016, the Services' strategic context has also changed in some areas. This includes the publication of a number of documents, many of which are certain to influence the Scottish Ambulance Service direction for the foreseeable future, especially in terms of Digital and ICT developments.

Scottish Government Digital Health & Care Strategy

Scotland's Digital Health & Care Strategy was published in April 2018. It replaced the Scottish Government eHealth Strategy 2014-17 and outlines the following vision:

"The strategic aim for Health and Social Care is that Scotland offers high quality services, with a focus on prevention, early intervention, supported self-management, day surgery as the norm, and – when hospital stays are required – for people to be discharged as swiftly as it is safe to do so."

The Strategy is articulated using six domains:
• Domain A – National Direction
• Domain B – IG, Assurance, Cyber Security
• Domain C – Service Transformation
• Domain D – Workforce Capability
• Domain E – National Digital Platform
• Domain F – Transition Process

It is notable, and significant, that there is a distinct shift from a technology focus to a focus on taking a national approach and to digitally enabled service transformation. This direction having been influenced by the findings from the Scottish Government Health and Sport Committee report outlined below.

Scottish Government Report on Technology & Innovation in Health & Social Care

The Scottish Government Health and Sport Committee published their report on *'Technology & innovation in health & social care'* in February 2018. The committee concluded that what they had heard was surprising and disappointing, the report cites -

• *"..a culture that was reluctant to adapt new ways of working and where innovation is not encouraged.."*

• *"..heavily out dated IT systems still cause major barriers.."*

• *".. a System where decisions are made on a board by board basis.."*

• *"..little leadership on technology and innovation.."*

• *"..repeated concerns around data sharing and interoperability.."*

• *"..slow uptake in the use of technology in the sector.."*

The findings from this report influenced the direction and approach taken with the new Digital Health & Care Strategy as outlined above.

Other Areas of Change Since April 2016

There have been too many changes in the strategic context over the last three years to detail all of them, therefore four examples are highlighted below:

- The Scottish Government *'Cyber resilience: public sector action plan 2017-2018'* from November 2017. This was largely driven by the outcome of the Wannacry malware attack in May 2017;

- The Scottish Government *"Digital Strategy for Scotland"* was published in May 2017. This document covers digital enablement and inclusion across Scotland and includes the public sector, private sector and those who chose to live in Scotland;

Although the Scottish Ambulance Service are not included in the scope of the following documents, they are of relevance as one relates directly to the GB ambulance sector and the other to digital healthcare, they are:

- The NHS England report on *"Operational Performance and Productivity in NHS England Ambulance Trusts"* by Lord Carter of Coles was published in September 2018. It focused on unwarranted variation across wide range of operational and back-office ambulance functions and services;

- The report by Dr Eric Topol on "Preparing the healthcare workforce to deliver the digital future" published in February 2019.
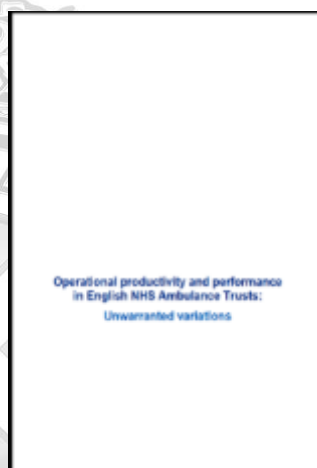
The table below provides an indicative summary of the relevant documents and publications, both internal and external, that have been reviewed and considered during the stock-take and that influenced the production of this strategy addendum document:

External References Included:	Internal References Included:
SG Health Care Quality Strategy	SAS Strategic Framework 2015-2020
SG Digital Health & Care Strategy	eHealth ICT Strategy 2016-20
SG eHealth Strategy 2014-2017	SAS eHealth ICT Strategy 2016-20
SG (NIS) Framework	SAS Strategic Workforce Plan 2015-20
SG Digital Strategy for Scotland	Information Governance Strategy 2018
NHSE National Ambulance Digital Strategy	Corporate Priorities 2018-19

3 - Strategic Principles & Aims

Section 3 of the current strategy document outlines five strategic eHealth ICT principles and nine aims, these have now been reviewed as part of the stock-take exercise. The outcome being that they have been retained as still relevant and fit for purpose for the remainder of the strategy period through to 2020. One minor amendment has been made to reflect the growing threat of cyber-attack; The wording of the first principle has been revised to read *'Reduce **Risk'*** in place of the original which was *'Reduce **Harm'***. The principles and aims are outlined below for reference.

Strategic eHealth ICT Principles

- Reduce Risk (Increase Safety)

- Increase Effectiveness and Sustainability

- Provide Value for Money

- Digital First

- Enable Innovation

Strategic eHealth ICT Aims

- To ensure that Service ICT systems, services and developments remain appropriately aligned with local and national aims, strategies and plans;

- To ensure that Service ICT systems, services and processes are appropriately secure, resilient and legally compliant;

- To provide Service staff with the information they need to do their job where they need it, when they need it and in an appropriate format;

- To maximise the efficiency and effectiveness of ICT systems and service provision and to provide demonstrable value for money;

- To ensure that Service ICT systems support appropriate two-way data / information sharing with relevant partner organisations and the public;

- To maximise the flexibility, agility and adaptability of ICT systems and services to ensure they remain fit for purpose and effective during periods of change;

- To ensure that opportunities for shared ICT systems and services are identified, investigated and embraced where appropriate;

- To procure and manage ICT systems and services with due regard for sustainability e.g. energy consumption (carbon footprint) and equipment disposal;

- To provide ICT systems and services in line with recognised ICT Service Management good practice e.g. ITIL (OGC IT Infrastructure Library).

4 - Review of Progress 2016-2018

The current eHealth ICT Strategy published in March 2016 outlined six eHealth ICT 'Targets' and thirty-four 'Planned Activities', most of which were ICT projects in their own right.

As with any strategy, the 2016 strategy was a forward looking document that set out a future roadmap based on the information available at that time. In addition, it set out a vision through strategic aims which continue to be delivered. However, as with any strategy, the plans and actions to deliver it must be flexible and adaptive.

Now, with the benefit of hindsight and new information which has emerged since 2016, it is clear that some of the activities planned in 2016 were either not deliverable, desirable, cost effective or of high enough priority to have been progressed as planned. In addition, external factors and dependencies have been a significant feature over the last 3 years.

Importantly, significant new requirements and priorities have emerged since 2016 with some of these having taken precedence over planned objectives and activities as appropriate. Our strategic approach has flexed successfully to accommodate these changes. However, given the current economic climate there has been an understandable absence of significant additional resources, this has caused other projects to slip. It is essential that this learning and adaptive approach is retained as a key feature of our strategy beyond 2020.

Progress Review - eHealth ICT Targets

The following table provides a high-level overview of the progress made with regard to the six eHealth Targets and how this compares with that planned in 2016. Green indicates the target has been delivered or is on-track, red indicates it is unlikely to be delivered by the target date.

Reference Number	eHealth ICT Target / Objective	Target Date & RAG Status
Target 1	Have a robust & reliable mobile broadband capability in 95% of ambulances	2020
Target 2	Have a robust & reliable video conferencing (VC) capability in 90% of Service premises	2020
Target 3	Have a robust & reliable video conferencing (VC) capability in 95% of emergency ambulances	2020
Target 4	Have the capability to pass electronic patient information to 100% of territorial health boards in Scotland	2018
Target 5	Have the capability to accept up to 50% of patient transport bookings electronically	2020
Target 6	Have reduced the number of individual servers in Service data centres by 20%	2020

Green indicates the target has been delivered or is on-track, red indicates it is unlikely to be delivered by the target date.

In terms of Target 1, the Ambulance Telehealth Programme delivered new mobile data hardware that supports four 4G SIM cards. When this target was set in 2016, the vision was that the new Emergency Service Network (ESN) would provide ubiquitous 4G coverage by late 2019. However, this is now delayed by at least 3 years due to slippage in the UK Government Emergency Service Mobile Communications Programme (ESMCP). The mobile broadband capability therefore relies on commercial 4G coverage which still varies considerably in Scotland.

Target 2 hinges on the availability of a viable client device based VC solution as providing dedicated VC hardware at over 150 sites is neither practical nor affordable. This work has been held back as the current nationally supported Cisco Jabber product is no longer supported or fit for purpose. As a result, the current plan is to evaluate and then select an alternative.

There are currently no firm plans to meet Target 3 as it hinges on the availability of the aforementioned ubiquitous 4G coverage from ESN, this unlikely to be delivered before summer 2023.

In terms of Target 4, the capability to pass electronic patient information to all Scottish territorial health boards is in place, however it has not yet been adopted by all Boards. The roll-out was temporarily paused during 2018 but is now being actively progressed in line with relevant Board partners.

Target 5 has not been actively progressed due to competing priorities, primarily the East ACC expansion project which was a priority and which ran through 2017 and 2018. This target will be reassessed and reprioritised during 2019 and 2020 in line with 'Stage 1' of our stock-take.

Target 6 has been met through an ongoing server virtualisation programme.

Progress Review - eHealth ICT Planned Activities

The table at the end of this section (page 16) provides a high-level overview of the progress made on the eHealth activities outlined in the current strategy and how this progress compares with that planned in 2016. Green indicates the target has been delivered or is on-track, amber indicates that it has been delivered or is expected to be delivered after the planned date and red indicates there is no firm delivery date set or agreed. More detail on each activity is provided in Appendix 1 for further reference.

The summary table shows that 53% of the activities have been completed as planned, 41% have been delayed and there are no firm plans to deliver two of them within the current strategy period. However, they will both feature in the new Digital Strategy.

There are three primary reasons for the changes and reprioritisation:
- **New / emergent priorities;**
- **Wider programme & project slippage (due to both internal & external factors);**
- **The requirement to work within existing resources.**

In terms of new or emergent priorities, those that have had the most significant impact on the planned eHealth activities over the last three years are:
- **The New Clinical Response Model (NCRM) Project (2016-2018)** – This project involved the most fundamental change to the way that the Service responds to patients since the 1970s, the aim being to effectively prioritise those patients with immediately life-threatening conditions while still providing an appropriate service to other patients.
- **The East Ambulance Control Centre (ACC) Project (2017-2018) –** This project involved significantly increasing the number of operator positions, the flexibility and the resilience of the East ACC. It involved significant work from both an ICT and an Estates / building perspective;
- **The West ACC Fixed-wire Testing Project (2018-2019) –** This project involved supporting a full 'decant' from the West ACC to support mandatory electrical testing;
- **Increased Cyber Resilience Activities (2017-2019) –** The Wannacry malware attack in May 2017 had a direct impact on many organisations globally, this includes the Service. Whilst the direct impact was 'short and sharp', the aftermath is having longer term implications in terms of improving the cyber resilience of Scottish public sector organisations. This additional focus on cyber resilience has diverted resources away from planned eHealth ICT activities.

The projects outlined above all had very substantial ICT workstreams. These were delivered using existing resources which resulted in the reprioritisation of existing plans.

In terms of wider programme and project slippage, two examples that have had a significant impact on the planned eHealth ICT Strategy activities over the last three years are:

- **Ambulance Telehealth Programme (2016-2019) –** Phase 2 of the Ambulance Telehealth Programme involved delivering a new electronic Patient Report (ePR) solution, access to a new SAS 'app' and access to selected 'back-office' systems from mobile data terminals. Phase 2 overran by over 12 months due to technical difficulties. This tied up technical staff for much more time and for longer than originally planned;
- **ESN - Emergency Service Network (2016-2019) –** As outlined earlier, the ESMCP has slipped by at least three years. This has had an impact in terms of tying up ICT staff and delaying interdependent projects and activities. The Service has limited control over the timescales for this externally driven (GB wide) programme and must therefore adapt and flex resources accordingly.

Finally, it has become increasingly apparent over the last three years that there is increased staff and patient demand for ICT and digital services with the ICT team having to respond to this demand.

Taking work forward into 2019/20 there is a need to consider an improved governance and prioritisation process across the Service to meet these changes and demands. This will be addressed during 2019 and 2020 as part of 'Stage 2' of this stock-take.

Reference Number	eHealth ICT Target / Objective	Target Date & RAG Status
Activity 1	Review the current command and control system / arrangements	2019
Activity 2	Implement a command and control 'buddy' capability	2016
Activity 3	Implement a command and control Patient Information Module	2016
Activity 4	Implement a command and control to GRS interface	2016
Activity 5	Continue to progress and develop objectives from 2012-2017 eHealth ICT Strategy as appropriate	2017
Activity 6	Review the current patient transport system / arrangements	2019
Activity 7	Implementation of an improved (fit for purpose) ACC fall-back telephony solution	2017
Activity 8	Complete an Airwave terminal refresh	2017
Activity 9	Transition from Airwave to the Emergency Service Network (including ACC functionality & connectivity)	2019
Activity 10	Deliver / Implement the Ambulance Telehealth Programme	2017
Activity 11	Review / replace scheduled care mobile data solution	2020
Activity 12	Deliver a unified communications capability	2018
Activity 13	Review / replace current mobile telephony / mobile data provision	2019
Activity 14	Provision of an capability for passing appropriate electronic information to health & social care partners	2020
Activity 15	Provision of a capability to access GRS rostering information via the Internet	2017
Activity 16	Review current desktop / office environment arrangements with a view to moving to cloud based provision if appropriate	2020
Activity 17	Migrate to NHS Mail 2	2017
Activity 18	Review current intranet infrastructure and technologies with a view to upgrading or replacing them	2018
Activity 19	Review current Data Warehouse infrastructure and technologies with a view to upgrading or replacing it	2017
Activity 20	Investigate new and emerging solutions for the public to contact / communicate with ACCs for unscheduled care	2020
Activity 21	Complete SWAN Transformation	2017
Activity 22	Migrate ACC network connectivity from the N3 COIN to SWAN	2019
Activity 23	Provide Wi-Fi access for additional devices e.g. Getac tablets, iPads etc	2016
Activity 24	Review the business cases to adopt wide-spread desktop virtualisation	2018
Activity 25	Define and develop an enhanced 'Digital' capability	2020
Activity 26	Review the business cases to adopt wide-spread server virtualisation	2018
Activity 27	Provide a capability to access appropriate Service ICT systems via the Internet without the need for a VPN token	2018
Activity 28	Review Service Delivery organisational structure	2019
Activity 29	Develop and implement an ICT staff development framework	2017
Activity 30	Review current (outsourced) service desk provision	2017
Activity 31	Explore, and where appropriate exploit, further opportunities for shared ICT services	2017-2020
Activity 32	Develop and introduce a new ICT Disaster Recovery plan	2016
Activity 33	Develop a suite of ICT focused performance indicators and a robust method of collecting and analysing 'user' feedback	2017
Activity 34	Develop and provide a self-service portal for staff who are experiencing ICT related issues	2017

Green = Delivered or on-track   Amber = Delivered late or delayed   Red = No firm plans in place or agreed

5 – Forward Plans 2019-2020

As outlined in Section 1, a three stage approach is now being progressed in order to identify the Scottish Ambulance Service Digital requirements and ambitions and then meet them. The first two of these stages will take place during 2019 and 2020.

Stage 1 involves consolidating the current position by continuing to deliver the outstanding work from the current strategy that is still of relevance and sufficiently high priority, as well any priority initiatives and projects that have emerged since the strategy was published in 2016. This also involves reviewing our governance, prioritization processes and change control regime. This will also tie into the overall risk management and appetite for the current and future strategy.

Stage 2 involves planning and preparing for the future based on two high-level objectives; the first is to continue environmental scanning and consultation with a view to developing a new Scottish Ambulance Service Digital Strategy by Q1 2021. Secondly, we will work with relevant stakeholders to define the milestones, benefits and crucial investment required to develop a structure capable of both **preparing,** and **delivering**, the new Digital Strategy

Below is a high-level overview of the work planned for both of these stages over the next two years.

Stage 1 – Continue and Consolidate

The Scottish Ambulance Service is one of three Scottish emergency services and is a NHS Scotland Health Board. Robust and reliable ICT service provision underpins the delivery of effective and efficient unscheduled and scheduled care services across Scotland. These services are coordinated through three Ambulance Control Centers (ACCs). All 999 calls, and all other calls requesting operational ambulance services, are answered and managed by ACC staff.

During 2018, an assessment was carried out to determine the progress made to date on delivering the work outlined in the current eHealth ICT Strategy, primarily to complete Section 4 and Appendix 1 of this document. The output of this assessment has been combined with the environmental scanning work completed as part of the current eHealth ICT Strategy stock-take to define a high-level workplan for 2019 and 2020.

The remainder of this section provides a summary of selected key activities and projects that are planned for 2019 and 2020. In addition, Appendix 1 has information on ongoing activities that will continue during 2019 and 2020.

ACC & Operational ICT Systems
- **West ACC Project** - This project will be similar to, but bigger than, the recent East ACC project. It involves increasing the number of operator positions, the flexibility and the resilience of the West ACC. It will involve significant work from the perspective of both ICT and Estates.
- **Integrated Communications Control System (ICCS) Replacement Project –** This project relates to Activity 9 from the current strategy. It involves replacing the system used by ACC staff to communicate with ambulance crews using the Airwave network (and eventually ESN).
- **Defibrillator Replacement Project –** This project involves replacing approximately 600 defibrillators across the emergency ambulance fleet. It also involves integrating the new defibrillator with current cab-based technology so that it can auto-populate the ePR. The solution will also support passing defibrillator trace data to cardiac receiving centers and will deliver the ability to gather detailed defibrillator data for training and analysis purposes.

Communications & Mobile Data Systems
- Emergency Service Network (ESN) Programme – This work relates to Activity 9 from the current strategy. As mentioned previously, the ESN was due to replace the current Airwave service by the end of 2019. However, this is now delayed by at least 3 years due to slippage in the UK Government Emergency Service Mobile Communications Programme (ESMCP). Work is in progress, and will continue, to ensure that Service interests are appropriately represented.
- **PTS Mobile Data Project -** This work relates to Activity 11 from the current strategy. The project involves building a business case to secure the funding to replace the current mobile data solution used throughout the scheduled care fleet. This equates to over 450 vehicles. Once the funding is secured, a solution will be procured and deployed.

ICT Infrastructure & Technologies
- **Telephony Upgrade Project –** This work relates to Activity 7 from the current strategy. The project involves upgrading the Service telephony platform to ensure it remains fit for purpose in terms of operational functionality as well as technical maintainability. The project scope includes the procurement of a long-term telephony maintenance agreement.
- **SASNET Project -** This work relates to Activity 22 from the current strategy. The project involves upgrading the ACC network platform to ensure it remains fit for purpose in terms of performance, resilience and maintainability. The project scope includes the Local Area Network (LAN) in each ACC, the Wide Area Network (WAN) which inter-connects the three ACCs (known as the COIN) and procurement of a network maintenance agreement.
- **Office 365 Project** - This work relates to Activities 12 & 16 from the current strategy. The project involves engaging with the NHS Scotland Office 365 Programme and migrating from the current exclusively 'on-premise' model for accessing applications in the Microsoft Office Suite and for storing documents. The intention is to adopt a predominantly cloud hosted model based on the Microsoft Office 365 suite. It is envisaged that this will offer benefits in terms of increased productivity and collaboration opportunities as well as increased security & resilience. This project will be a significant undertaking.
- **Data Warehouse Replacement Project -** This work relates to Activity 19 from the current strategy. The project involves upgrading the data warehouse platform, software and reporting capability. Work is in progress, the hardware is in place and a 3rd party has been engaged to assist in scoping out the wider reporting requirements. When their final report is received, work will start on building the new data warehouse itself.
- **Windows 10 Deployment Project -** This project involves migrating the vast majority of Service client devices from Windows 7 to Windows 10. The aim being to maintain cyber resilience by aligning with Microsoft product lifecycles and to enable the Service to use new client devices (desktops, laptops etc) which no longer support on Windows 7.

Cyber Resilience and alignment with Information Governance
- **NIS Framework Alignment -** Having been designated an 'Operator of Essential Services' (OES), the Service are subject to the EU Network Information Services (NIS) Regulations that came into force during May 2018. The Scottish Government have been designated the Competent Authority (CA) that will oversee, and enforce where required, the implementation of the controls outlined in the NIS Directive. They have intimated that they plan to give SAS (and other organisations that come within the NIS scope) twelve months to put suitable arrangements in place to meet their obligations. This period ends in May 2019 at which point NIS 'inspections' are expected to commence. Meeting the NIS requirements will be a significant task from an IT Security and Information Governance perspective.

Back-Office Systems
- **GRS (Global Rostering System) -** This project involves further enhancements to the current workforce planning solution. This will typically be achieved through the deployment of new software modules in order to support new or changed business processes.
- **eESS (Electronic Employee Support System) -** Again, this project involves further enhancement to an existing system, this time the current HR solution. It will also be achieved through the deployment of new or updated software modules in order to support new, or changed, business processes.

'Business as Usual'
- In addition to the various projects that are planned, or are ongoing, the ICT Department support day to day ICT service provision across the Service. This includes over 4750 staff, around 150 sites and 3000 end user devices. It also involves over 3000 Airwave radio terminals and cab-based technology in over 1000 vehicles.

Review of Governance Arrangements
Following approval of the key priority projects outlined, these will be the key focus of the ICT team over the next 2 years. In order to reduce the risk of non-delivery, internal governance arrangements will be reviewed, the aim being to improve risk management, prioritisation and change control over the remainder of the strategy. This will include:
- Ensuring any changes to these plans undergo a formal change control process so the Service understands the implications including risks, reprioritization requirements and resources implications
- Reviewing the current scope and terms of reference for Enabling Technology Programme in recognition of these key priority projects;

Stage 2 – 'Plan and Prepare for the Future'

This stage involves two high-level objectives; developing first Scottish Ambulance Service Digital Strategy by Q1 2021 and ensuring that appropriate arrangements are put in place to develop and then deliver it.

Digital Strategy – Development and Planning
As previously mentioned the current plan is to continue environmental scanning and consultation with a view to developing the first ever Scottish Ambulance Service Digital Strategy for approval by the Service Board by Q1 2021.

However, this will not be done in isolation. Work is well underway to develop the next corporate strategic framework; it is likely to cover the period 2021 through to 2030. Digital initiatives are rarely 'an end in themselves', they are more typically focused on wider service improvement or transformation. With this is mind, the Digital Strategy will be developed to align with, and fully support, the new strategic framework. This will be achieved through close liaison between the respective teams involved and key stakeholders within and out-with the Service.

It is anticipated that work on developing the Service Digital Strategy will increase towards the end of 2019. The anticipation being that, by this time, the work outlined in the next section below will be in progress, and the capability required to produce the Digital Strategy will be in place.

Digital Strategy - Preparing to Develop and Deliver
Like many organisations, the Scottish Ambulance Service have historically produced ICT strategy documents to articulate their medium to long-term plans and approach with regard to using information and communications technology, latterly these have included eHealth initiatives. These strategy documents have typically been produced by the head of the ICT Department following a period of stakeholder engagement.

The current eHealth ICT Strategy is likely to be the last in its current form, the intention being to replace it with a 'Digital' Strategy. It is widely accepted that 'Digital' means more than simply '*the new ICT*' and that it involves digitally enabled service transformation. As such, developing a Digital Strategy will involve significant input from stakeholders across the Service and certainly more than just ICT management and staff.

In order to ensure that the transition from an ICT Strategy to a Digital Strategy is managed appropriately, work will be undertaken during 2019 and 2020 to ensure that suitable governance and management arrangements are established. The aim being to secure the capacity and capability to produce a comprehensive Digital Strategy by Q1 2021, then deliver it over the period 2021-2030. The strategy will include high-level delivery plans with key milestones, benefits management and realisation plans, investment plans and regular checkpoints.

6 – Digital Strategy 2021-2030

The first ever Scottish Ambulance Service Digital Strategy will be planned and developed during 2019 and 2020 then delivered from 2021 onwards as outlined in Section 1 of this document. Current indications are that the new corporate strategic framework that is under development will cover the period 2021 though to 2030 with a number of 'checkpoints' on the way. The Service Digital Strategy is very likely to cover the same period and will also incorporate regular checkpoints.

Work on developing the Digital Strategy is at a very early stage, However, based on the information gathered through the environmental scanning and literature review completed so far, there are a number of common themes that are likely to feature in the Digital Strategy document. Although these themes will continue to be developed over the next two years, a selection of them are pre-viewed at high level throughout the remainder of this section.

Context Setting

The Scottish Ambulance Service Digital Strategy is being developed against a backdrop of increasing demand for ambulance services, resource constraints and rapidly growing public expectations in term of Digital public service delivery and availability.

There is clear demand for new digital services, both internally and externally. From an internal perspective, in 2018 when the Scottish Ambulance Service Board were asked for their views on digital service provision, their response strongly supported transformational change. From an external perspective, a recent Citizen's Panel report[1] showed that the vast majority of Panel members (85%) believed there were benefits to using digital communication tools and technologies to access health and social care services.

It is also clear that Digital is more than just *'the new ICT or eHealth'*. One quote from the Scottish Government Digital Health & Care Strategy reads *"if we focus on the technology without embracing the business transformation around it then nothing will change".* A well led, well-resourced and well-coordinated multidisciplinary approach is required to enact transformational Digital change.

Data, and robust information management, are key to unlocking the full potential that Digital transformation has on offer. Unless the Service extract the full value from the data it holds and that it has access to, its Digital journey will be less productive than it could be.

It is with this context in mind that the themes on the next page have emerged.

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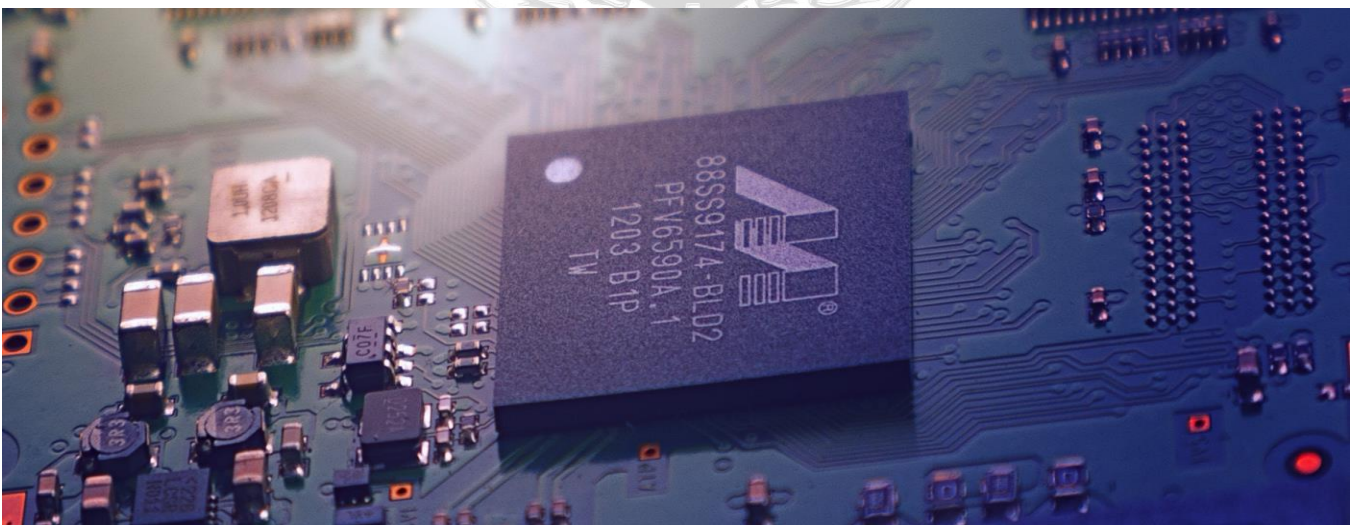
[1] Our Voice Citizen's Panel - Third Survey Report – January 2018

Theme 1
Building and maintaining robust foundations

- Putting appropriate leadership, governance & delivery structures in place
- Adopting a standards based approach
- Providing a robust and resilient ICT infrastructure e.g. networks, mobile data, cloud etc
- Providing core operational ICT systems e.g. 999 Telephony, Command & Control, PTS etc
- Adopting integrated and shared systems
- Putting appropriate data & information governance arrangements in place
- Supporting our staff to gain the Digital skills they will require
- Supporting robust programme and project management
- Providing an appropriate 'Back-office' capability
- Working within a collaborative environment with patient quality and outcomes as the key focus of any initiative

Theme 2
Breaking down barriers

- Barriers to patients accessing our services, or the information we hold on them, when and how they want to
- Barriers to staff making the best possible decisions (i.e. providing decision support)
- Barriers to collaborating (e.g. using Office 365)
- Barier to developing effective partnerships
- Barriers to sharing information
- Barriers to taking a common / National approach
- Communication barriers
- Distance barriers (e.g. using Video)

Theme 3
Effectively Managing Risk

- Putting effective and appropriate Information Goverance arrangements in place
- Putting effective and appropriate Cyber Resilience arrangements in place (e.g. EU NIS Directive compliance)

Theme 4
Delivering Best Value

- Embracing Digital innovation e.g. AI, 'wearables' etc
- Doing the right thing first time (reducing waste)
- Adopting and embracing an improvement culture
- Putting effective and appropriate demand management arrangements in place
- Putting effective and appropriate prioritisation arrangements in place
- Developing robust business cases
- Putting effective and appropriate benefits management and realisation arrangements in place
- Leveraging full value from our data

APPENDICES

Appendix 1

Update on Planned eHealth ICT Activities 2016-2018 (continued from section 4)

Reference Number	eHealth ICT Target / Objective	Current Status	Target Date & RAG Status
Activity 1	Review the current command and control system / arrangements	The current system arrangements were considered as part of an initiative looking forward to 'Future Projects' during 2017 and 2018. The conclusion being that the current system is still fit for purpose. The plan is to continue applying appropriate enhancements / developments for the remainder of the current eHealth ICT Strategy period. Any project to re-procure / replace the command and control system will be a significant task and will therefore have to be resourced accordingly.	2019 Achieved
Activity 2	Implement a command and control 'buddy' capability	In order to improve patient care and experience through better sharing of information, a 'buddy' system has been implemented which enables the electronic transfer of incident details between the command and control systems of two ambulance services. The buddy system was successful implemented between Northern Ireland and the Scottish Ambulance Service in March 2018. Plans are now being progressed to extend this to English Ambulance Trusts.	2016 Achieved - later than planned
Activity 3	Implement a command and control Patient Information Module	In order to support improved patient care through effective information sharing between healthcare providers, the Service have implemented a solution to allow Clinical Advisors within the ACC (Ambulance Control Centre) to access Emergency Care Summary (ECS) and Key Information Summary (KIS) information via a Web Interface. A link has also been developed from our ePR (Electronic Patient Report) to the ECS and KIS database. This interface allows Ambulance crews to access ECS and KIS information from an incident scene.	2016 Achieved
Activity 4	Implement a command and control to GRS interface	The Service has the interface however, due to other priorities this has not been implemented as yet.	2016 Delayed
Activity 5	Continue to progress and develop objectives from 2012-2017 eHealth ICT Strategy as appropriate	The objectives from 2012-2017 eHealth ICT Strategy have been reviewed and have either been completed, abandoned or carried into current workload.	2017 Achieved
Activity 6	Review the current patient transport system / arrangements	The current system arrangements were considered as part of an initiative looking forward to 'Future Projects' during 2017 and 2018. The conclusion being that the current system is still fit for purpose. The plan is to continue applying appropriate enhancements / developments for the remainder of the current eHealth ICT Strategy period. Any project to re-procure / replace the patient transport system will be a significant task and will therefore have to be resourced accordingly.	2019 Achieved

Activity 7	Implementation of an improved (fit for purpose) ACC fall-back telephony solution	Work is in progress. The East ACC solution has been installed. The North will be completed during April 2019 and the West by June 2019.	2017 In-progress
Activity 8	Complete an Airwave terminal refresh	The Airwave terminal replacement programme was delivered as planned.	2017 Achieved
Activity 9	Transition from Airwave to the Emergency Service Network (including ACC functionality & connectivity)	The vision in 2016 was that the new Emergency Service Network (ESN) would replace Airwave and provide ubiquitous 4G coverage by late 2019. However, this is now delayed by at least 3 years due to slippage in the UK Government Emergency Service Mobile Communications Programme (ESMCP). ESN will not be delivered during the remaining period of the current strategy so this will be carried forward into the new strategy.	2019 No firm plans in place
Activity 10	Deliver / Implement the Ambulance Telehealth Programme	The key projects and products have been delivered by this Programme. They include; procurement and installation of new hardware and communications infrastructure within the unscheduled care fleet. They also include the development and deployment of a new ePR and a new SAS information 'app'.	2017 Achieved - later than planned
Activity 11	Review / replace scheduled care mobile data solution	This project was postponed due to competing priorities. It is now underway with work ongoing to build the business case and secure the funding required. Implementation is likely to be during FY 2020-2021.	2020 In-progress
Activity 12	Deliver a unified communications capability	The current telephony solution offers a unified communications capability. This this has not been progressed for deployment due to lack of demand and competing priorities. Unified comms will be considered further as part of the Digital Strategy.	2018 Achieved
Activity 13	Review / replace current mobile telephony / mobile data provision	A review was carried out and the corporate contract was moved to alternative provider in line with a national framework contract. In 2016 the plan was to migrate mobile data provision to ESN in 2019, however ESN is now delayed so a review will be carried out before the end of the current strategy period	2019 On track
Activity 14	Provision of an capability for passing appropriate electronic information to health & social care partners	This capability has been delivered. The ability to send Service ePR (Electronic Patient Report) data to GP systems has been rolled out to 6 of the 14 territorial boards. These boards receive Service ePR data for patients that have been treated at home. The functionality has been extended to the SCI-DC team, who now receive ePR data from SAS for patients who have been treated at home in relation to diabetes. Work is ongoing to role the interface out to the remaining Boards.	2020 Achieved
Activity 15	Provision of a capability to access GRS rostering information via the Internet	This activity has been completed. Staff are able to access GRS rostering via the Internet.	2017 Achieved
Activity 16	Review current desktop / office environment arrangements with a view to moving to cloud based provision if appropriate	Work is being progressed in line with the national O365 programme. Local SAS implementation resources have yet to be secured so this is a risk to the timescales.	2020 On-track

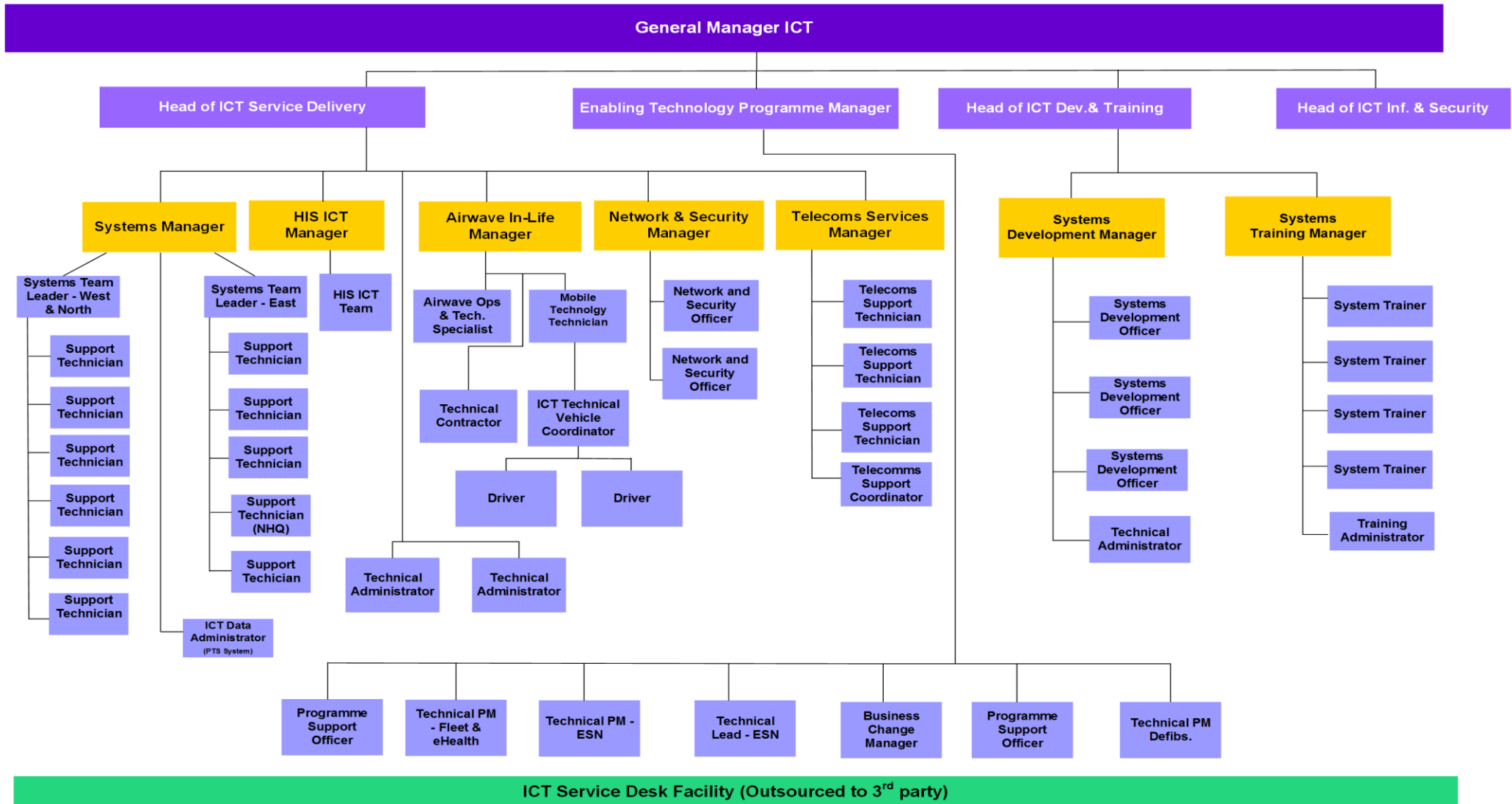| Activity 17	Migrate to NHS Mail 2	This activity has been completed.	2017 Achieved
Activity 18	Review current intranet infrastructure and technologies with a view to upgrading or replacing them	No progress has been made on this due to other priorities.	2018 No firm plans in place
Activity 19	Review current Data Warehouse / Business Intelligence infrastructure and technologies with a view to upgrading or replacing them	Work is in progress. The hardware is in place and a 3rd party has been engaged to assist in scoping out the requirements for a new Data Warehouse. The final report is due by the end of Q1 2019. Implantation is likely to take place during 2019 and 2020.	2017 In-progress
Activity 20	Investigate new and emerging solutions for the public to contact / communicate with ACCs for unscheduled care e.g. the GoodSAM app	This is currently work in progress and is still on schedule for completion during the current Strategy period.	2020 In-progress
Activity 21	Complete SWAN Transformation	This activity has been completed.	2017 Achieved
Activity 22	Migrate ACC network connectivity from the N3 COIN to SWAN	The migration project in in progress. Work will be completed by the end of 2019.	2019 On-track
Activity 23	Provide Wi-Fi access for additional devices e.g. Getac tablets, iPads etc	This activity has been completed.	2016 Achieved - later than planned
Activity 24	Review the business cases to adopt wide-spread desktop virtualisation	This activity has been completed.	2018 Achieved
Activity 25	Define and develop an enhanced 'Digital' capability	Work is currently on-going.	2020 On-track
Activity 26	Review the business cases to adopt wide-spread server virtualisation	This activity has been completed.	2018 Achieved

Activity 27	Provide a capability to access appropriate Service ICT systems via the Internet without the need for a VPN token	This has not been progressed due to competing priorities and the fact that a viable solution is in place (albeit requiring a VPN token)	2018 Delayed
Activity 28	Review Service Delivery organisational structure	This has been postponed as the primary driver for this was the migration from Airwave to ESN. It will be picked up when there is more clarity around ESN transition dates.	2019 Delayed
Activity 29	Develop and implement an ICT staff development framework	This is in progress but is not complete due to competing priorities. The target is to do so by the end of 2019.	2017 Delayed
Activity 30	Review current (outsourced) service desk provision including the option of creating a shared service desk facility for relevant Service functions (e.g. ICT, Fleet, Estates etc)	This work has been postponed due to the current national NHS Board collaboration work. It will be picked up when there is a clearer picture of requirements across the national Boards.	2017 Delayed
Activity 31	Explore, and where appropriate exploit, further opportunities for shared ICT services	Active engagement in the current national NHS Board collaboration work is in progress.	2017-2020 On-track
Activity 32	Develop and introduce a new ICT Disaster Recovery plan	The ICT Disaster Recovery plan has been reviewed and updated as required.	2016 Achieved - later than planned
Activity 33	Develop a suite of ICT focused performance indicators and a robust method of collecting and analysis 'customer' feedback	This is in progress but is not complete due to competing priorities. The target is to do so by the end of 2019.	2017 Delayed
Activity 34	Develop and provide a self-service portal for staff who are experiencing ICT related issues	The Self-Service Portal is available to all staff within the Service via the Intranet for reporting ICT issues. Work is also underway to expand the Portal to include Service Request.	2017 Achieved - later than planned

Appendix 2

ICT Department Organisational Chart – March 2019

ICT Department Structure – March 2019

General Manager ICT

- **Head of ICT Service Delivery**
- **Enabling Technology Programme Manager**
- **Head of ICT Dev.& Training**
- **Head of ICT Inf. & Security**

Head of ICT Service Delivery:
- **Systems Manager**
  - Systems Team Leader - West & North
    - Support Technician
    - Support Technician
    - Support Technician
    - Support Technician
    - Support Technician
    - Support Technician
  - Systems Team Leader - East
    - Support Technician
    - Support Technician
    - Support Technician
    - Support Technician (NHQ)
    - Support Techician
  - ICT Data Administrator (PTS System)
- **HIS ICT Manager**
  - HIS ICT Team

Enabling Technology Programme Manager:
- **Airwave In-Life Manager**
  - Airwave Ops & Tech. Specialist
    - Technical Contractor
  - Mobile Technolgy Technician
    - ICT Technical Vehicle Coordinator
      - Driver
      - Driver
  - Technical Administrator
  - Technical Administrator
- **Network & Security Manager**
  - Network and Security Officer
  - Network and Security Officer
- **Telecoms Services Manager**
  - Telecoms Support Technician
  - Telecoms Support Technician
  - Telecoms Support Technician
  - Telecomms Support Coordinator

Head of ICT Dev.& Training:
- **Systems Development Manager**
  - Systems Development Officer
  - Systems Development Officer
  - Systems Development Officer
  - Technical Administrator
- **Systems Training Manager**
  - System Trainer
  - System Trainer
  - System Trainer
  - System Trainer
  - Training Administrator

Bottom row (Enabling Technology Programme Manager):
- Programme Support Officer
- Technical PM - Fleet & eHealth
- Technical PM - ESN
- Technical Lead - ESN
- Business Change Manager
- Programme Support Officer
- Technical PM Defibs.

ICT Service Desk Facility (Outsourced to 3rd party)

Appendix 3

Glossary of Terms –

Term	Meaning
ACC	Ambulance Control Centre
Airwave	An encrypted, TETRA based, digital mobile radio network for the Emergency Services.
ASL	Airwave Services Limited – Airwave service provider.
Backup	Copying applications and information on a tape or other media in order to enable the original to be restored if required.
Bandwidth	The capacity of a communications channel.
Broadband	High speed wide area network connection.
Browser	A software application that allows a user to access information on the Internet and HTML pages.
Buddy	A mutual arrangement between SAS and Northern Ireland to take emergency calls if either service has technical issues
CAD	Computer Aided Dispatch. The term CAD is also often used to describe the C3 command and control system.
CITSD	Communications and IT Services Department the previous name for ICT Department.
CNI	Critical National Infrastructure
CoIN	Community of Interested Networks – Network that joins the control rooms together
Data Warehouse	A large store of data that has been pulled from various systems into a single database, and is used for reporting
Database	A computerised collection of data which is stored in a structured way to allow the user to easily store and retrieve information.
DECT	Digital Enhanced Cordless Telephony
DR	Disaster Recovery.
ePR	Electronic Patient Report.
ePRF	Electronic Patient Report Form.
ECS	Emergency Care Summary.
EISEC	Extended Information Service for Emergency Controls.
EMDC	Emergency Medical Dispatch Centre, previous term used for Ambulance Control Centre (ACC).
ESMCP	Emergency Service Mobile Communications Programme
ESN	Emergency Service Network
Firewall	A device and/or software that prevents unauthorised and improper transit of access and information from one network to another.
Gigabyte	A measure of the storage capacity of hard disks and memory.
GIS	Geographic Information System is a computer system designed to manipulate data with any form of geographical reference.
GoodSAM	An application designed for mobilising community first responders
GPS	Global Positioning System.
GRS	Global Rostering System – Duty Management application
HTML	Hypertext mark-up language. Computer code that describes how to format a page of information.
HTTP	Hypertext transfer protocol. A protocol for transferring data between computers.
ICT	Information and Communications Technology.

Interface	An information interchange path that allows parts of a computer, multiple computers and external equipment to communicate or interact.
Internet	Worldwide information service, consisting of computers around the globe linked together by communication circuits.
Intranet (@SAS)	Term used for internal information repository. Sometimes described as an internal Internet.
ITIL	IT Infrastructure Library.
KIS	Key Information Summary.
LAN	Local Area Network that provides a cabling system for total intercommunication between computers, workstations and printers within a limited geographical area, enabling sharing of files, software, hard disks and peripherals such as printers.
N3	NHS approved 'Broadband' Network for Secure Clinical Communications.
NDN	National Defibrillator Network – British Heart Foundation project
Network	The equipment and transmission facilities for intercommunication between computers, workstations and printers.
NHS Mail	NHS approved Electronic Mail System.
PTS	Patient Transport Service.
Relational Database	A method of organising and structuring data in related tables which are connected by common fields in each table.
Server	Used in a network, servers are the host machines that house the files used by other workstations in the network.
Service Desk	24/7 manned service through which ICT user requests and faults can be logged.
SLA	Service Level Agreement. An agreement between service providers and service users.
SIP	Session Internet Protocol (used by modern Telephone Systems).
SMG	Survivable Media Gateway (used by modern Telephone Systems).
SQL	Structured Query Language which enables users to specify the items of data to be abstracted from a database and to define their presentation.
SWAN	Scottish Wide Area Network – National Network used to connect all SAS sites together.
UPS	Uninterruptible power supply. Device containing batteries that protects electrical equipment from surges in the mains power.
URL	Uniform Resource Locator. This describes the type of an information resource and its location.
Virtualisation	A virtual version of a computing resource that behaves as though it was a physical resource
Virus	Malicious software that replicates itself and often corrupts computer programs and data.
VPN	Virtual Private Network extends a private network across a public network securely
WAN	Wide Area Network.
WiFi	Wireless Fidelity is a mechanism for wirelessly connecting electronic devices.
XML	Extensible mark-up language. A method of conveying information and its context.

EQIA SUMMARY

- Complete the questions from the EQIA and present as an appendix to the proposal/paper. Include key points in summary in the cover paper.

		Answer	
1.	Have you considered equality and equality impact on different groups and issues.	Yes	If the answer is no, the proposal is not ready to come to the Board or Committee.
			If yes, go to Q2
2	What form did this take?		
	Equality Impact Screening	Yes	
	Equality Impact Assessment	Yes	
	Other	Consultation with Service Equalities Manager	
3	What consultation did you undertake? Specify which protected characteristics groups were included.	Consultation with: Service Equalities Manager, Executive Team, Senior Leadership Team, Operational Management Team. No specific protected characteristics groups were included.	Go to Q4
4	Did you identify any equality impact? - For any group - Across any of the three "needs"	Yes	If yes Go to Q5 If no go to Q8
5	Describe the nature of the impact, which "need" is involved, and which groups were affected. Specify if the impact was positive, adverse or neutral.	Disabilities Positive - On the new ambulance tablets, staff have the ability to zoom into text on the tablet where appropriate. Printouts will be in larger font and will be more legible. A spellchecker	Go to Q6

| | | will be included in the ePR software;

- The telehealth tablet can provide access to new apps e.g. for interpreting services; -

- Support for the needs of Service users, e.g. adjustments to hardware or software for accessibility;

- Additional contact channels are likely to aid accessibility

- New PTS mobile data system is likely to have a positive impact in terms of decision support.

Opportunities to enhance equality
External access to more systems will support more flexible, agile equitable methods of working for all staff.

Opportunities to enhance equality

External access to more systems will support more flexible, agile equitable methods of working for all staff.

The eHealth ICT Strategy addendum continues the Service commitment to ensuring that all eHealth ICT systems and services are designed and operated so that individuals with one or more of the specific protected characteristics highlighted above are not treated differently. This includes new, existing and modified eHealth ICT systems.   In addition, reasonable adjustments will continue to be made as required.

ECS / KIS interfaces enable quick access to the Emergency Care Summary and key Information Summary which will help us deliver better patient care e.g. end of life wishes etc. | |

		- The transfer of patient information between Schedule & Un-Scheduled Care systems reduces the need to ask patients similar information again, particularly when details relate to the patient's disability; - There is the potential for increased levels of treatment at the point of care, reducing the need for conveyance to A&E and reducing potential stress levels for patients who may otherwise have been removed from their home environment for treatment.	
6	Did you identify any adverse impact?	N/A	If you answered yes, Go to Q7. If no, go to Q8.
7	What mitigations have been put into place to reduce adverse impact? Please specify how this will reduce the impact and how the proposal/policy has been changed.	N/A	Go to Q8
8.	What opportunities are there to enhance equality for any of the protected characteristic groups or others? Please specify these and say how the proposal has been changed to incorporate these.	When new ICT systems are introduced or existing systems are enhanced and modifies, there is an assessment to ensure that any opportunities to enhance equality for protected characteristic groups are exploited if possible. This is done by following the Service EQIA guidance e.g. EQIAs were completed for the Ambulance Telehealth Programme and Defib Programme.	Go to Q9
9	Are there monitoring arrangements to monitor the impact of the proposal/policy? Describe the monitoring arrangements or explain why none is required.	Yes - Service EQIA guidance is followed for relevant eHealth ICT projects and developments e.g. EQIAs were completed for the Ambulance Telehealth Programme and Defib Programme.	Go to Q10
10	Do you consider the Board or Committee has enough information to understand the equality impact of the proposal and to use this to inform their decision?	Yes	If the answer to Q10 is no, the paper is not ready to come to the Board or Committee.

			If the answer is yes, sign off the template or alternative report.

Signed: ⟋⟍Backer

Title: GM ICT

Date: 11th March 2019

The Scottish Ambulance Service
A Special Health Board of NHS Scotland

Equality Impact: Screening and Assessment Form

Section 1: Policy details - policy is shorthand for any activity of the organisation and could include strategies, criteria, provisions, functions, practices and activities including the delivery of our service.	
a. Name of policy or practice (list also any linked policies or decisions)	eHealth Strategy 2019-20
b. Name of department	ICT Department
c. Name of Lead	John Baker
d. Equality Impact Assessment Team [names, job roles]	M Christie (Head of ICT Development & Training), A Tobin (Equalities Manager), J Baker (GM ICT)
e. Date of assessment	11th March 2019
f. Who are the main target groups / who will be affected by the policy?	Service staff, NHS Partners, Patients
g. What are the intended outcomes / purpose of the policy?	The aims of the eHealth Strategy are as follows: • To ensure that Service ICT systems, services and developments remain appropriately aligned with local and national aims, strategies and plans; • To ensure that Service ICT systems, services and processes are appropriately secure, resilient and legally compliant; • To provide Service staff with the information they need to do their job where they need it, when they need it and in an appropriate format; • To maximise the efficiency and effectiveness of ICT systems and service provision and to provide demonstrable value for money; • To ensure that Service ICT systems support appropriate two-way data

	/ information sharing with relevant partner organisations and the public; • To maximise the flexibility, agility and adaptability of ICT systems and services to ensure they remain fit for purpose and effective during periods of change; • To ensure that opportunities for shared ICT systems and services are identified, investigated and embraced where appropriate; • To procure and manage ICT systems and services with due regard for sustainability e.g. energy consumption (carbon footprint) and equipment disposal;
h. Is the policy relevant to the General Duty to eliminate discrimination? advance equality of opportunity? foster good relations?	ICT is a key enabler in advancing equality of opportunity. This eHealth ICT Strategy is therefore relevant in this area.
If yes to any of the three needs complete all sections of the form (2- 7) If no to all of the three needs provide brief detail as to why this is the case and complete only section 7 If don't know: complete sections 2 and 3 to help assess relevance	Yes - Advance equality of opportunity

Section 2: Evidence, consultation and involvement
Please list the available evidence used to assess the impact of this policy, including the sources listed below. Please also identify any gaps in evidence and what will be done to address this.

a. Previous consultation / involvement with community, including individuals or groups or staff as relevant. Please outline details of any involvement / consultation, including dates carried out and protected characteristics

Details of consultations - where, who was involved	Date	Key findings	Protected characteristics
n/a			Age
			Disability
			Gender reassignment
			Gender / sex
			Marriage / civil partnership *
			Pregnancy / maternity
			Race
			Religion / belief
			Sexual orientation
- Equalities Manager - SAS Board - SLT - OMT - Exec Team - SLT	Mar 19 Feb 19 Dec 18 Oct 18 Sept 18 Jun 18	No equality issues mentioned / identified. No adverse impact has been identified. It is worthy of note that all relevant ICT initiatives and developments follow the Service EQIA guidance / process. As such, specific EQIA benefits and dis-benefits tend to be picked up in this way e.g. Ambulance Telehealth, Defib Replacement etc	Cross cutting - e.g. health inequalities - people with poor mental health, low incomes, involved in the criminal justice system, those with poor literacy, are homeless or those who live in rural areas. Other?

	Available evidence
b. Research and relevant information	Also refer to page 3 and page 10 of eHealth ICT Strategy addendum **Reference Documentation - Scottish Ambulance Service:** • Strategic Framework: Towards 2020 Taking Care to the Patient • eHealth ICT Strategy 2016-20 • Information Governance Strategy 2018 • Strategic Workforce Plan 2015-20

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Corporate Priorities 2018-19
Corporate Priorities 2019-20 (draft)
Clinical Response Model Report

Reference Documentation – External:

NHS Scotland Healthcare Quality Strategy
Scottish Government Digital Health & Care Strategy
Scottish Government Health and Sport Committee Report on 'Technology & innovation in health & social care'
Scottish Government Network Information Systems (NIS) Framework
Scottish Government Cyber Resilience Strategy for Scotland
Scottish Government Cyber Resilience Public Sector Action Plan
Scottish Government Digital Strategy for Scotland
University of Stirling Response Model Report
NHS GG&C Digital Strategy
NHS England National Ambulance Digital Strategy
NHS England report on Operational Performance and Productivity in NHS England Ambulance Trusts
NHS England report on Preparing the healthcare workforce to deliver the digital future

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<td>c. Knowledge of policy lead</td>
<td>Policy Lead is ICT Lead for the Service and is a member of the National eHealth Leads Group. Policy Lead has undergone Service EQIA training.</td>
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<td>d. Equality monitoring information -- including service and employee information</td>
<td>N/A</td>
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<td>e. Feedback from service users, partner or other organisations as relevant</td>
<td>No feedback to date</td>
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<td>f. Other</td>
<td></td>
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<td>g. Are there any gaps in evidence? Please indicate how these will be addressed</td>
<td>None that the EQIA Team are aware of.</td>
</tr>
<tr>
<td>Gaps identified</td>
<td>N/A</td>
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<tr>
<td>Measure to address these; give brief details.
Further research?</td>
<td>N/A</td>
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Consultation?	
Other	
Note: specific actions relating to these measures can be listed at section 5	

Section 3: Analysis of positive and negative impacts
Please detail impacts in relation to the three needs specifying where the impact is in relation to a particular need - eliminating discrimination, advancing equality of opportunity and fostering good relations

Protected characteristics	i. Eliminating discrimination	ii. Advancing equality of opportunity	iii. Fostering good relations
Age			
Positive impacts	There is age related contextual information provided on the new ambulance tablet.		
Negative impacts	None identified		
Opportunities to enhance equality			
Disability			
Positive impacts	- On the new ambulance tablets, staff have the ability to zoom into text on the tablet where appropriate. Printouts will be in larger font and will be more legible. A spellchecker will be included in the ePR software; - The telehealth tablet can provide access to new apps e.g. for interpreting services; - - Support for the needs of Service users, e.g. adjustments to hardware or software for accessibility; - Additional contact channels are likely to aid accessibility - New PTS mobile data system is likely to have a positive impact in terms of decision support.		
Negative impacts	None identified		
Opportunities to enhance equality	External access to more systems will support more flexible, agile equitable methods of working for all staff.		
Gender reassignment			
Positive impacts			
Negative impacts	None identified		
Opportunities to enhance equality			
Gender / sex			
Positive impacts			
Negative impacts	None identified		
Opportunities to enhance equality			
Marriage / civil partnership			
Positive impacts			
Negative impacts	None identified		
Opportunities to enhance equality			

Pregnancy / maternity	
Positive impacts	
Negative impacts	None identified
Opportunities to enhance equality	
Race	
Positive impacts	
Negative impacts	None identified
Opportunities to enhance equality	
Religion / belief	
Positive impacts	
Negative impacts	None identified
Opportunities to enhance equality	
Sexual orientation	
Positive impacts	
Negative impacts	None identified
Opportunities to enhance equality	
Cross cutting - e.g. health inequalities people with poor mental health, low incomes, involved in the criminal justice system, those with poor literacy, are homeless or those who live in rural areas. **Other**	
Positive impacts	The eHealth ICT Strategy addendum continues the Service commitment to ensuring that all eHealth ICT systems and services are designed and operated so that individuals with one or more of the specific protected characteristics highlighted above are not treated differently. This includes new, existing and modified eHealth ICT systems. In addition, reasonable adjustments will continue to be made as required.
Negative impacts	None identified
Opportunities to enhance equality	- ECS / KIS interfaces enable quick access to the Emergency Care Summary and key Information Summary which will help us deliver better patient care e.g. end of life wishes etc. - The transfer of patient information between Schedule & Un-Scheduled Care systems reduces the need to ask patients similar information again, particularly when details relate to the patient's disability;

	- There is the potential for increased levels of treatment at the point of care, reducing the need for conveyance to A&E and reducing potential stress levels for patients who may otherwise have been removed from their home environment for treatment.

Note: specific actions relating to these measures can be listed at section 5

Section 4: Addressing impacts
Select which of the following apply to your policy and give a brief explanation - to be expanded in Section 5: Action plan

	Reasons
a. **No major change** - the EQIA shows that the policy is robust, there is no potential for discrimination or adverse impact and all opportunities to promote equality have been taken	At this stage no adverse impact has been identified, the actual impact of this revised eHealth ICT Strategy will be monitored during the period covered by the strategy document as required.
b. **Adjust the policy** – the EQIA identifies potential problems or missed opportunities and you are making adjustments or introducing new measures to the policy to remove barriers or promote equality or foster good relations	
c. **Continue the development and implementation of the policy without adjustments** – the EQIA identifies potential for adverse impact or missed opportunity to promote equality. Justifications for continuing without making changes must be clearly set out, these should be compelling and in line with the duty to have due regard. See option d. if you find unlawful discrimination. Before choosing this option you must contact the Equalities Manager to discuss the implications.	
d. **Stop and remove the policy** - there is actual or potential unlawful discrimination and these cannot be mitigated. The policy must be stopped and removed or changed. Before choosing this option you must contact the Equalities Manager to discuss the implications.	

Section 5: Action plan
Please describe the action that will be taken following the assessment in order to reduce or remove any negative / adverse impacts, promote any positive impacts, or gather further information or evidence or further consultation

Action	Output	Outcome	Lead responsible	Date	Protected characteristic / cross cutting issue*
Further consultation with Equalities Manager	Verbal and written feedback on EQIA process and documentation	Further reassurance that revised eHealth ICT Strategy is sound from an EQIA perspective	M Christie	March 2019	Cross cutting
Submission to Service Board for approval	Verbal feedback on strategy including EQIA process and documentation	Further reassurance that revised eHealth ICT Strategy is appropriate including from an EQIA perspective	J Baker	March 2019	Cross cutting
Publication & communication of eHealth ICT Strategy	Increasing wider knowledge and awareness of revised eHealth ICT Strategy	Increased stakeholder awareness	J Baker	April 2019	Cross cutting

* list which characteristic is relevant - age, disability, gender reassignment, gender / sex, marriage and civil partnership, pregnancy and maternity, race, religion / belief, sexual orientation or cross cutting issue e.g. poor mental health, illiteracy etc

Section 6: Monitoring and review
Please detail the arrangements for review and monitoring of the policy

	Details
a. How will the policy be monitored? Provide dates as appropriate	The eHealth ICT Strategy will be replaced in late 2020 or early 2021. In addition, the Service hold eHealth ICT reviews with the Scottish Government eHealth Team at least annually.
b. What equalities monitoring will be put in place?	A further EQIA will be carried out as part of the new strategy development

	process in 2020.
c. When will the policy be reviewed? Provide a review date.	2020

Section 7: Sign off
Please provide signatures as appropriate

Name of Lead	Title	Signature	Date
J Baker	GM ICT		12th March 2019

Completed form: copy of completed form to be retained by department and copy forwarded to Equalities Manager for publication on Service website

Provide date this was sent	12th March 2019