This document constitutes the NHS National Services Scotland response to the Scottish Parliament Health & Sport Committee’s Call for Views on Technology & Innovation issued on 31st May 2017.

1. What do you consider have been the main successes of the existing Scottish Government’s eHealth and telecare/telehealth strategies and why?

In broad terms, the previous eHealth and Telehealth/Telecare strategies have been successful in bringing a much needed focus on technology in the context of health and care in Scotland. These successes have mostly related to establishing the structures, governance and relationships necessary to create successful delivery in support of the key health and care strategies for Scotland.

Specifically, this focus has been successful in:

- Developing good management techniques which focus on managing and resetting expectations around scope, time and budget.
- Creating an environment that focuses on how to prioritise the funding available for technology in the health service.
- Major internal business, patient administration and clinical information management systems in place – major platforms have been successfully implemented across the country.
- Basic primary/secondary care data sharing and workflows in place, with increased reach of key clinical care information – many information governance challenges have been addressed in achieving this and NHSS has displayed good responsible stewardship of patient information.
- Strong national level business intelligence/analytics capability focused on planning, service performance, etc. Basic real time management information available within health boards.
- Large national level portfolio of systems is in place which can be used to enable (limited) service transformation across health board boundaries and national shared services – economies of scale and reduction in wasteful variation is being enabled to some degree.
- Creating long-term partner relationships with key suppliers as well as the ongoing development of these.
- Creating partnerships (domestic & international) and promoting the potential of Scotland’s health and care ambitions.
- Stimulating early stages of innovation and developing pilot initiatives for evaluation.

2. What do you consider have been the main failures of the existing Scottish Government’s eHealth and telecare/telehealth strategies and why?

At the heart of the main failures has been the inability to translate the strategy, governance and relationships into consistent widespread delivery of better outcomes for patients and citizens.
Specifically, the main failures are:

- The patient facing digital capabilities are limited and disparate in nature – lack of single national set of communications channels for patients/citizens. The websites/comms channels could be better integrated with each other and with mainstream clinical service delivery at large.
- The eHealth strategies do not adequately support clinical service transformation objectives – they are too generic and need require more direction in support of business transformation/best practice. The focus has tended to be on reducing cost of IT service delivery versus driving business/clinical service efficiencies. Success has too often been measured quantitatively rather than qualitatively, and not driven by service (business) need i.e. improvements in patient outcomes, patient experience and health economic benefits.
- There has been an imbalance of decision making between technical leaders and clinical leaders, which affects the ability to focus on major clinical and business priorities and delivery of clinically relevant outcomes. Agendas have been heavily influenced by the need to deliver against individual budget lines rather than across budget lines, and in response to bigger picture service demands and priorities.
- High levels of variation persist in both eHealth and Telehealth/Telecare environments across health and care delivery organisations. There has been an imbalance between local and national activity, leaning towards local which has resulted in unnecessary variation and potential inefficiencies. Given the challenges around clinical service sustainability and the direction for NHSS around regional planning, shared services and Once for Scotland activities, this balance needs to be swiftly addressed.
- Dispersion of the vast majority of eHealth finances to local level makes it difficult to direct the necessary finance/resource at larger projects, which would best be delivered through a more coordinated national approach.
- Where there is major business change which involves technical work, there is a need for the costs of that, both for set up and on an ongoing basis, to be considered. Taking all the Health Economics aspects and a holistic view of the impact on the full business budget is critical moving forwards.
- ‘Integration’ has been more focused on joining up within organisations, in particular within hospitals – there needs to be much more focus on integration across care settings (community, primary and secondary) and across geographic boundaries (cross-boundary care as well as regionally/nationally provided care).
- Standards and interoperability were mentioned in previous strategies but there has been limited application. It is important that the strategy focuses realistically on how this will be delivered.
- Failure to drive the coherent converged technical infrastructure required to enable faster development and deployment of new applications – IT infrastructure convergence has not been driven by previous strategies and local choice has therefore been exercised. This is becoming a major constraint to large scale change and timely maintenance of robust and secure systems.
- Analytics focus has been at the two extremes of a data and intelligence spectrum – immediate patient management real-time data and academic
research. There needs to be a better focus on the whole spectrum and the power of good intelligence to drive improvements in outcomes as well as efficiencies.

- Failure to effectively link and make available operational/clinical information for research. There is a huge imbalance of investment into the academic side against the NHS operational side.
- New innovative solutions have failed to gain any real traction throughout the service – often pilot investments are marginal in value, and do not impact enough on mainstream service delivery.
- Difficulty in deploying successful pilot/proof of concept solution at scale across service – no standard process for driving new technologies through to national level deployment fully funded and supported solution status
- Information Governance (IG) is perceived to be a major barrier. The rules and regulations are inconsistently applied across different organisations – and more importantly, there is a need to consider and plan IG into the design and development or work to avoid it become an obstacle.
- Lack of an overarching governance of all aspects of technology and innovation to ensure that resources are maximised and focused to deliver against service priorities.

3. **How well does the Scottish Government's draft Digital Health and Social Care Strategy 2017-2022 address the future requirements of the NHS and social care sector?**

- The vision statements are all valid but they deal with the issues at a very high level. The vision needs to be far more specific in terms of how it will support the realisation of the Health & Social Care Delivery Plan, and major strategies such as Realistic Medicine.
- It needs to outline a more specific vision of how a ‘digital’ health service will improve the efficiency and effectiveness of the service from citizen, patient, carer, clinician, employee and IT professional perspectives.
- It appears to take a safe approach and stops short of making any tough decisions about priorities, funding trade-offs, architectural platforms or on the level of convergence required to support transformation objectives. There will be limited success without this specific focus.
- The vision statements are articulated from a citizen perspective (supporting the person-centred ambition), other perspectives need to be considered. These would include those from Health & Care Delivery organisations (supporting Scotland’s Health Economics and Realistic Medicine agendas) and from Enterprise, Research & Innovation organisations (supporting Scotland’s Economic & Academic Development agendas). These need to be synchronised as far as possible to provide a landscape that all parties can collaborate together towards a single set of clear ambitions and aims.

4. **Do you think there are any significant omissions in the Scottish Government's draft Digital Health and Social Care Strategy 2017-2022?**

- The context and links to Realistic Medicine, the National Clinical Strategy and the Health & Social Care Delivery Plan (Dec 2016) should be explicit as
drivers. Need to ensure appropriate focus on supporting service transformation, clinical service improvement outcomes and improved patient outcomes.

- The strategy would benefit from including narrative outlining key priorities, emphasising the need to look holistically at budgets, supporting consideration of “invest to save” opportunities and on the level of convergence required to support transformation objectives.
- Need to make sure that it also addresses more specifics around IT Infrastructure/platform strategy, digital patient engagement, internal digital workplace, data analytics, research/academic support, new innovation evaluation and integration, IT/eHealth workforce strategy.
- The strategies of the past and the new vision are big on the ‘what’, which in the past has been open to interpretation of the reader. This new strategy should address this through inclusion of cohesive governance arrangements, supported by a fully-funded delivery plan which, while challenging, is realistic and makes explicit choices on ‘how’ delivery will be enabled.
- Clinical leadership in eHealth needs to be strengthened and an appropriately skilled and capable workforce supported. The proposal to have a Chief Clinical Information Officer/Clinical Director of eHealth is welcomed. However it is vital that this is positioned effectively from a governance perspective to ensure the maximum impact of the role.
- The reliance of NHSS on technology has increased significantly, while the effectiveness of business continuity approaches is reducing. We need core systems with appropriate resilience and potentially higher levels of disaster recovery. This will mean investing in key legacy systems or replacing them through planned modernisation.

5. **What key opportunities exist for the use of technology in health and social care over the next 10 years?**

- Digital Self-Management (or community supported management) of Long Term Conditions to become the norm i.e. the service transformation agenda shifting care from Acute to Primary/Community settings and care in a home environment with optimisation of patient and carer self-management.
- Digital Clinical/Care Decision Support – supporting anyone responding to a need within the “circle of care”, with appropriate resources or connection to someone who does, when they need it. Includes support for care professionals to make decisions and deliver consistent care informed by best practice.
- Digital service delivery - evolution of ‘virtual’ clinical service delivery environments, e.g. out-patient services. Focus to date has been on education to reduce referrals and video-conferencing for consultations, i.e. same general model with a bit of tech on top. Need to be bolder in redesigning services with provision of digital triage and advice by specialists (e.g. through use of digital images and digital clinical dialogue) to focus in person out-patient appointments on urgent, complex and unusual cases.
- Digital Telecare – proactive and predictive health care based on the use of passive technology (personal devices / Internet of Things) in the home which monitors multiple characteristics tailored to the person with appropriate
interventions when “deviations from the norm” arise i.e. the care in a homely setting agenda

- Digital Wellness – programmes of activity supported by the use of devices that help citizens prepare & recover from procedures as well as staying “well” in the first place i.e. the prevention agenda.
- Digital engagement and workplaces – to support cross-functional Health and Social Care teams to collaborate in care delivery through sharing information and managing workflow.
- Artificial Intelligence - for modelling and prediction to better inform preventative efforts and early interventions targeted at those at risk, and informing a personalised approach to care.
- Advanced analytics - use of data to support development of new and improved clinical services/ pathways and to support development and evaluation of new medicines, tools, etc.
- Automation of repetitive administrative tasks to allow resource to be directed to higher value activities.
- Robotics – many applications across Health & Social Care.
- Genomics.

There is an opportunity that the National Digital Collaboration will:

“Enable business transformation across the National Boards through deploying digital skills and capabilities to develop and deliver access to new and existing services in a way which meets our public and partner needs, and latterly support and drive transformation across the wider health and social care landscape”.

Key objectives:

- To review and agree a set of shared principles for digital leadership.
- To make an influential contribution to the Scottish Government’s emergent Digital Strategy for Health & Social Care.
- To develop an outline, five year plan to maximise the NHS Boards’ digital contribution to the delivery of the HSCDP. This to be discussed between and beyond the 8 National Boards and Local Authorities.
- To identify the key workstreams that will underpin digital transformation across all NHS Boards and Local Authorities.
- To identify digital transformation capability and resource across National Boards.
- To identify a framework, approach and methodology to ensure a consistent and cohesive way of working for digital transformation across National Boards.

We should set clear measures of success and targets for each area. The focus of any measures should be on improved outcomes, pathways and health economic benefits.

We should be ambitious and bold (and still be realistic) in setting these targets in the knowledge that we may not achieve all of them. If we continue to be conservative and risk averse in our plans and targets, we are very unlikely to
achieve step changes in terms of our service delivery, outcomes, pathways and finances.

6. **What actions are needed to improve the accessibility and sharing of the electronic patient record?**

- There should be a clear statement on the creation of Scotland’s Digital Platform which will allow citizens to digitally engage with their health and care enabling device connection, health and care transactions and, critically, the standards and protocols for the sharing of data.
- This statement needs to articulate to citizens what they will be able to do and by when, as well as informing what will be required of them in return.
- This platform will be the basis of a robust, secure and scalable patient access portal at the national level. Extending this to include patient choice of access channel/device should also be a fundamental.
- Information Governance issues/framework/access and update business rules need to be developed – these are more difficult to develop/agree than the actual sharing/editing technology. Citizens should be central to solutions and rules that are developed.
- This then becomes the foundation for the enablement and support of “citizen centred circles of care” which allows health & care professionals, family/friends/community and 3rd sector organisations to work seamlessly and together to deliver and improve the quality of care for individuals.
- This clarity also then allows innovators (and current suppliers) to orientate themselves to this environment and, with the right set of challenges, start the creation and demonstration of solutions that address the challenges.

7. **What are the barriers to innovation in health and social care?**

Innovation will be an important way to do things differently and achieve step changes in the way we deliver services. Digital innovation offers real opportunity to enable service redesign. However the approach to-date has been somewhat haphazard and not enough value has been realised from investments made. There are several barriers to successfully innovating technology in health and social care:

- **Leadership & Governance**
  - An overarching governance of innovation and technology needs to be adopted in relation to an agreed framework/model for innovation. Each component of the model should have an organisation (or organisations) recognised as accountable for their delivery in that component.
  - Health & Social Care Management Board leadership should establish clear priorities and challenges to be addressed by those accountable for early stage innovation (e.g. Innovation Centres, SG & Health Innovation Teams).
  - Leadership is required, at all levels, which fosters a true co-design/co-production environment and breaks down the barriers between organisations and budgets.
Lack of overarching governance of those responses that drives through to rapid scaling up of the successful ones.

The Scaling Up/Widespread Adoption aspect in particular needs this focus on leadership and accountability.

Where, on occasion, direct leadership is required to achieve outcomes, it should be applied.

**Coordination & Facilitation**

- Lack of a cohesive approach to widespread adoption and the full set of skills/capability/capacity required to achieve it e.g. Procurement, Technology, Data Management, Health Economics, Change Management, Project Management/Support and Benefits Realisation.
- Lack of a named body accountable for the rapid scaling up of successful innovative technologies.

**Prioritisation/Focus on business need**

- Lack of a challenge and response environment driven by priorities.
- There should be crystal clear evaluation criteria for approval of funding for innovation related to delivering improved patient outcomes/pathways, delivering health economic benefits and ability to scale easily.
- Technology & Innovation requires to be driven by business need – too many innovations have a purely technical focus and are too often ‘technical solutions looking for a business problem’.

**Funding**

- It is not unusual for successful businesses in the private sector to invest 5-10% of their turnover towards ICT Innovation & refresh. As a comparator, NHSScotland currently invests less than 1%.
- Inadequate investment to support long term deployment and evolution of new technologies. There is too much invested in ‘front end’ development stage and not enough in integration/deployment stages.

**Consistent model/process**

- Lack of an established and agreed closed loop Model for Innovation in Scotland (akin to the Model for Improvement established as part of the Scottish Patient Safety Programme) that accepts and learns from failure as well as informing future priorities and challenges.
- We should be comfortable with “failure” – not everything will evaluate successfully through an innovation process.
- Lack of process maturity in clinical service delivery/quality management systems – similar scaling up challenges exist in our Model for Improvement.
- Allowing a default “opt out” position rather than default “opt-in” when successful innovations are identified.

**Very Traditional Methods** persist in terms of IT & Procurement and resistance to co-design & co-production remains one of the biggest barriers to widespread adoption. This results in pilot projects and their evaluation not being accepted beyond the locale requiring further and multiple evaluations before further adoption is possible. The result is slower, incremental and
multiple implementations over a long period of time rather than a planned national adoption plan which would provide the benefits quicker and provide a level of standardisation across the country.

- **Scaling up – including capacity & ongoing support**
  - Not enough focus on scaling up and rapid widespread adoption
  - Poor ability to enact business/clinical service change
  - Capacity for innovation and its implementation – right now, eHealth and local change teams can only focus on "keeping the lights on" which means innovation which is not driven from within their local domain, cannot be supported effectively.
  - Capability for Scaling Up – some skills exist locally but these are rightly focused on local delivery activity. There is a need to focus on rapid, national scaling up and supporting that with people and skills focused on that national agenda. These include Change Management, IT, Procurement, Data/IG Management, Benefits Realisation & Project Management/Support resources that can link with local leads to rapidly deploy successful evaluations that emerge through the Innovation pipeline.