NHS Ayrshire & Arran

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Meeting:	**Ayrshire and Arran NHS Board**
Meeting date:	**Monday 1 February 2021**
Title:	**Innovation in NHS Ayrshire & Arran**
Responsible Director:	**Dr Crawford McGuffie, Medical Director**
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1. Purpose

This is presented to the Board for:
- Discussion

This paper relates to:
- Emerging issue

This aligns to the following NHSScotland quality ambition(s):
- Effective

2. Report summary

2.1 Situation

This paper provides a summary of the current Innovation activity within NHS Ayrshire & Arran (NHA A&A), highlights the future national and local opportunities and the local challenges this work generates. The challenges include the lack of local innovation funding and project management support.

2.2 Background

Scottish Government requested that Innovation Leads were first established in each Health Board in 2013 with no significant direction in the role and function within services at that time. In the last 24 months there has been a significant growth in the strategic appetite for Innovation and this had led pre COVID to a realisation that the operational delivery of innovation was a muddled landscape and national groups have been tasked to look at this to ensure more robust logistical systems and financial support are put in place. COVID-19 accelerated the rate of delivery of innovation projects with a number of existing projects early adopted and rolled out across the country. There is an opportunity to harness this change and build on the rapid innovation delivery platforms but it is essential to understand the different role that these different services address and how Innovation fits with existing services:

- Research and Development (R&D) (long term evidence building),
- Innovation – identification of wicked problems with a rapid prototype test-bed development process and
- Technology Enabled Care (TEC) procurement, adoption and rollout of developed solutions

It is also essential that within national healthcare delivery it is established how These services can work effectively together to ensure our patients and service providers have access to the best care delivery without duplication of effort. Key will be the need for NHS A&A to be agile in our response times, in a competitive market, as national innovation opportunities have a quick turnaround so NHS A&A risk missing opportunities that could benefit service delivery, patient care and staff welfare. Within staff welfare, participation in R&D, Innovation and TEC are key to attracting and retaining the best workforce both clinical and non-clinical in an organisation with forward thinking healthcare delivery at its heart.

The R&D Lead sits on the local TEC Digital Services Steering Group Meeting and provides Highlight Reports to the Group detailing updates on ongoing projects and current opportunities. This provides the TEC services on an overview of projects that are in development before they reach the procurement stage and also identification of service area pressures and potential identification of wicked problems.

Currently, there is a national programme of Innovation projects covering challenges in NHS and Social Care. Management of these projects are through a three Regional Hub model with NHSA&A part of the West Hub. The projects fall under three main areas.
1. iCaird- (Industrial Centre for AI Research in Digital Diagnostics)
2. Unscheduled Care Consortiums and Projects
3. Consortium Groups - Stimulating Projects and Investment to innovate in Test Beds

Areas of need are agreed and prioritised by the national Test Bed Governance Group. The Test Bed Governance Group or stakeholders will resource some innovation activity within a Scottish Test Bed. This may be in the form of an Open Innovation competition such as a SBRI (Small Business Research Initiatives where businesses are paid to innovate), Crowd Sourcing or other forms of collaboration. At the end of the SBRI projects, a procurement process needs to be undertaken.

Currently across Scotland there are a number of test beds underway or in development in areas such as dermatology, care homes, cardiology/heart failure, multi-morbidity, personal protective equipment (PPE) and Infection Control. Successful outcomes of these SBRIs will move to procurement stage in the next 12-18 months.

2.3   Assessment

Prior to COVID two key pieces of innovation work that were happening locally were the PROMS system developed by My Clinical Outcomes (MCO) - PROMS System and vCreate, a Secure Video Messaging service.

The MCO work was developed through a previous local SBRI project funded through the Cancer Innovation Challenge and usage in haematological cancers is ongoing. During COVID-19 there has been further regional roll-out of the system to lung cancer.

Further discussions for other tumour group roll-out is being undertaken within the national and regional contexts including Inhealthcare and the Scottish Gov – Procurement Exercise in development for a Remote Health Monitoring Solution – Intended to be 'Once for Scotland'. In parallel there are also national and regional discussions about the role that PROMS have in the Cancer Recovery Plan.

Prior to COVID, discussions were also underway to introduce vCreate to the paediatric services. In the last nine months due to the additional needs generated by the COVID restrictions, the vCreate team revised their plans and secured national TEC funding for roll-out to paediatrics and also neonates.

- Neonatal Units to provide family integrated care, allowing unit staff to upload short video clips of a baby for parents to view using the vCreate platform.
- Paediatric Neurology department, allowing patients (or patient carers) to securely share seizure videos and key associated data at the time of suspected seizure, with specialist epilepsy teams for clinical decision making.
- Paediatric and Adult Intensive Care Units to allow for sharing of clinical update videos for families of patients who are currently in their care.

Roll-out of this work was facilitated by the essential input and ongoing support by the TEC team, Digital Services and Information Governance.

In addition to the examples detailed above there are projects that are rolling into 2021. These are detailed below.

Eye Health

Although service delivery challenges in ophthalmology were already recognised such as the large number of Out-Patient appointments, COVID-19 has accelerated the need to address these issues. For this SBRI, which is being led by NHS Forth Valley with NHS A&A a partner, the challenge is to address the unmet need of next generation home vision testing, so that it can be done at home, in school and in under-served communities, with live remote supervision from healthcare professionals. Eye problems will be more easily detected, monitored, and managed to prevent sight loss. The project will bring together low-cost digital solutions and sources of relevant information to solve the challenges of:

- access to eye testing
- quicker diagnostics
- enabling self-checks

Phase 1 will run from Feb 2021 to May 2021 with Phase 2 following on with successful phase 1 applicants running for nine months resulting in prototype development and field testing.

Drones
Autonomous drone technology will be increasingly utilised within a number of sectors. In the last half of 2020, drone usage within the NHS has started to be explored with the Skyports delivery project in Argyll & Clyde and several COVID related projects in England.

NHS A&A is the clinical lead for this work within the West of Scotland (WoS). The WoS is a partner in a phase 2 application for Future Flight Challenge, a four year, £125 million Industrial Strategy Challenge Fund (ISCF) programme (outcome to be announced). In addition, a national innovation group has been established to ensure that drone usage addresses real needs within NHS service delivery. Three key national areas have been identified as potential multi-board test case uses and these will be worked up by the end of March 2021.

- Laboratory usage – samples/point of care testing
- Chemotherapy
- Emergency service response

Key to this work is to ensure that it addresses a real need and is not just an adoption of new technology. Locally there is interest particularly for remote and rural areas such as Arran where transportation constraints occur (weather disruption, ferry service disruption etc). Test case uses will be developed in the early part of 2021 with potential local test flights subject to funding (Future Flight bid) and regulatory requirements occurring in the last quarter of 2021/ first quarter 2022.

Glasgow School of Art
3rd Year Product Design
For the last six years, 3rd year product design students at Glasgow School of Art have undertaken a six week placement within services and helped services using a co-design model to map service issues and suggest possible solutions.

In 2020, this work moved to a virtual platform and the students were asked to design Healthcare Services, through the lens of the future of Blended Healthcare. This work involved focusing on what future services that relate to that theme might look like in ten years' time. This included adopting a more blended approach with greater integration of digital technologies, but still maintaining the critical human aspect. The students were asked to prioritise not only the patient experience, but also the service provider's experience of their work and how they may achieve a sense of fulfilment with a new approach. Part of this process involved critically considering which aspects might be improved with a technological intervention, and which should remain centred around direct human contact. Three themes were explored.

Theme 1: The Future of Urgent Care
Looking at how a blended model can improve urgent care, ranging from urgent and acute that need to be treated rapidly to those conditions a patient may consider to be urgent (may also include urgent mental health care) but may not be considered as life threatening. This process also included that how a blended model could potentially address the congestion issues in the emergency department.

Theme 2: The Future of Chronic Care
Looking at how a blended model can improve the care of chronic conditions such, as COPD and diabetes, where people are engaged with multiple services over a long period of time, but also often are responsible for more of the care themselves.

Theme 3: The Future of Holistic and Preventative Care
Looking at how a blended model can help the service providers in the community deliver holistic and preventative care, that help address health issues like obesity,

poor mental health and substance abuse, helping people to be healthier and flourish.

The project finished at the end of November 2021 and the outputs have been shared with the Transformation and Sustainability team to help inform ongoing discussions for Caring for Ayrshire.

Masters Students
From Jan 2021 to April 2021 a group of Masters students from Glasgow School of At will work virtually with staff from the Douglas Grant Rehabilitation Service to investigate opportunities to enhance and develop service provision by exploring the aspects of their In-patient experience specifically asking 'How can the Neurological Rehabilitation Service within NHS Ayrshire & Arran communicate to, engage with and provide for the people who work there and for whom they offer their services in a way that enhances value and purpose for those people'.

<u>Future Opportunities</u>
In addition to the work detailed above and in the spirit of embracing the once for Scotland approach in 2021, it has been proposed within the innovation community that there will be a focus on developing national innovation programmes focusing on a number of areas including but not limited to:

- Mixed reality/asynchronous consultation - 3D Telemedicine and Holography Attendance at Clinic or health/social care assessment
- AI technology to address work challenges such as in Imaging
- Drones, as detailed above.
- Medicines – National Programme with two main strands
    - Advanced manufacturing and reshoring of medicines – Paper with UK Government
    - Medicines utilisations, patient outcomes and procurement - discussions ongoing with Scottish Government Pharmacy Team to identify key areas to progress. Test Bed opportunities to follow.

As these develop, there will be further Test Bed opportunities for NHS Ayrshire & Arran in 2021 in these areas, but not limited to these areas, but consideration will need to be given as to the local ability to deliver on these opportunities within the current structures.

2.3.1 Quality/patient care
Within each of the individual innovation projects, the positive and negative impact on quality of care and services are key outcomes. There is always a risk that the outcomes of an innovation project may not result in a positive outcome and in these situations outcomes are not taken forward. For this reason an organisation needs to have a risk tolerance for failure when attempting to address the wicked problems by engaging with innovation opportunities. Not all SBRI projects have positive outcomes but there will always be key learning from the initiatives.

2.3.2 Workforce
Historically, across the Boards Innovation Leads sat within a number of different support services. Although within A&A the Innovation lead is also Head of R&D, the funding for R&D activity is underpinned by service level agreements which clearly state that R&D funding is reserved for R&D activity and not Innovation/Service

Development work so project management support is limited. As part of the ongoing national review consideration is being given to R&D Offices rebadging to include Research, Development and Innovation (R,D & I). Some offices have already made this switch and established an Innovation Team sitting alongside the existing R&D Team. Discussions are ongoing within CSO/NRS (Chief Scientist Office/NHS Research Scotland) as to how this will fit with the regional model of Innovation Funding distribution and existing R&D Funding agreements. With the absence of dedicated project management support, roll-out of implementation of projects, in particular vCreate, relied on the support of the TEC service which had no additional resource to support this activity. Future innovation activity will generate further work for Digital services and Information Governance during set-up and delivery and ultimately also for TEC for procurement and widespread adoption. If there is an appetite to embrace the opportunities within NHSA&A then this additional workload needs to be acknowledged and appropriately resourced.

2.3.3 Financial
NHS A&A receives no direct innovation funding. Funding is allocated on a regional basis. NHS Greater Glasgow and Clyde hold the funds and have developed a West of Scotland Innovation Team. In order to develop further local innovation activity, the Board is asked to consider and advise if there are any opportunities within the City Deal funding and other initiatives to build local Innovation capacity.

2.3.4 Risk assessment/management
Key risks are the need for local innovation funding and project management staffing to support Innovation activity within NHS A&A. It needs to be recognised that successful delivery of future Innovation activity requires dedicated project management roles and expertise in addition to the team that deliver research activity (this is a different knowledge and expertise to deliver trial work vs SBRI activity).

2.3.5 Equality and diversity, including health inequalities
Impact assessments will be undertaken as part of project set-up as appropriate.

2.3.6 Other impacts
Innovation plays a key role -
- Development of best healthcare delivery including new models of service delivery
- Challenging workforce thinking
- Organisation reputation
- Recruitment and retention of the best clinical and non clinical staff who are keen to embrace transformation and to have continuous service improvement as part of the day-to day service delivery.

2.3.7 Communication, involvement, engagement and consultation
The Board has carried out its duties to involve and engage external stakeholders where appropriate:
- Engagement with key stakeholders is an essential part of the development of solutions within innovation projects. This is identified on a case by case basis.

2.3.8 Route to the meeting
This paper has not been considered by any other groups/committees.

2.4   Recommendation

This paper is for:

- Awareness – of current innovation activities and future opportunities

- Decision – to agree the renaming of R&D to Research, Development & Innovation to recognise the importance of innovation in the development of healthcare services and support the development of an Innovation Team.

- Discussion – sourcing of funding opportunities to support delivery of local innovation opportunities and the level of risk that NHS A&A will tolerate for failure when attempting to address the wicked problems and developing an innovation workspace.