

NHS Forth Valley Innovation Plan 2022-2027

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Background

Innovation is at the heart of NHS transformation and is a key component in ensuring we can develop and deliver NHS services effectively for the future. As a result of COVID 19, there has been rapid engagement and innovative solutions developed at pace to support services to recover from the impact of the pandemic. The successful implementation of solutions has led to an appetite for change and removed barriers that had previously hampered and slowed the speed of innovation.

The Remobilise, Recover and Redesign Framework for Scotland¹ outlines how NHS Boards will remobilise, support development and embed innovation and digital approaches into our everyday practise whilst aligning to the national care programmes. NHS Forth Valley has identified this as a key priority within “Our system wide remobilisation plan” and is working to identify priority innovation challenges and opportunities taking account of innovations being developed via the three Regional Hubs.

Implementing NHS Forth Valley’s Innovation Plan will enable us to embed the use of technology into our everyday practice and business. It will aid identification of priority innovation challenges and opportunities, ensuring we continue to support the acceleration of digital services and innovation and improve patient outcomes and experiences.

This will be achieved by implementing the following strategic objectives:

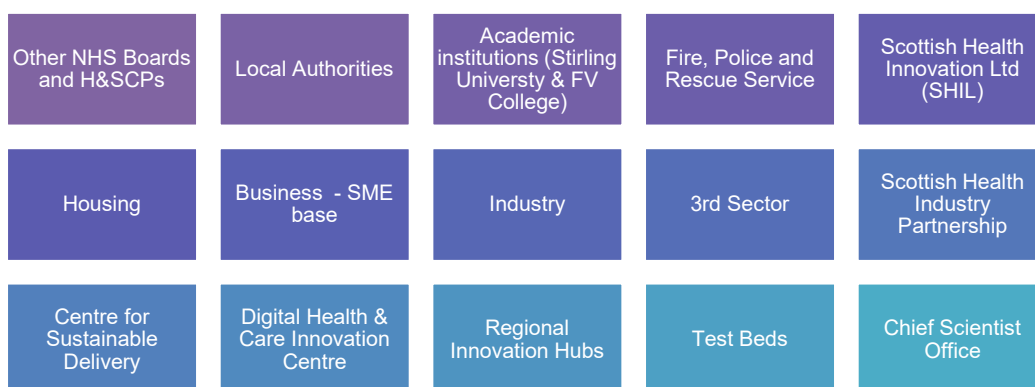
1. Develop an organisational culture that values and supports innovation
2. Involve people and staff in the design of tools, technologies and services that support them
3. Embed an agile Innovation governance process to help ensure our priorities and resources are aligned, supported, and managed appropriately
4. Develop a Quality Management System (QMS) approach for medical device regulation
5. Increase visibility of local innovation activity and success

¹ <https://www.gov.scot/publications/re-mobilise-recover-re-design-framework-nhs-scotland/>

Innovation Landscape in Scotland

A key priority for Scotland is to develop innovation as an intrinsic part of the country's culture, society, and economy. To that end there is an emerging innovation ecosystem within Scotland, and it is key that NHS Forth Valley is connected and works within this landscape.

The national response to COVID has highlighted how we can harness the spirit of cooperation and collaboration, including mobilisation from all our key partners. (Noted below)



NHS Forth Valley is involved in several regional and national innovation fora with service challenges and innovative solutions routinely identified by individual staff and teams, together with clinical and management involvement in Regional and National Planning forums.

NHS Forth Valley is a member of the Test Bed for innovation model. This brings together three regional areas in Scotland that are committed to deliver the Chief Scientist Office Service Level Agreement priorities of:

- a) Creating additional capacity to partner with industry, academia, and others to run open innovation collaborations.
- b) Increasing the quality and quantity of industrial innovation collaboration projects – to deliver solutions to health and social care strategic priorities, whilst also delivering economic growth.
- c) Providing support for academic led 'Triple Helix' open innovation collaborations.

We plan to continue to offer Test Bed opportunities to industry and social enterprise and have increased research and development and innovation collaboration with Strathclyde University, University of Stirling and Forth Valley College. Our relationship with academia will be further developed to include student projects and potential for skills building.

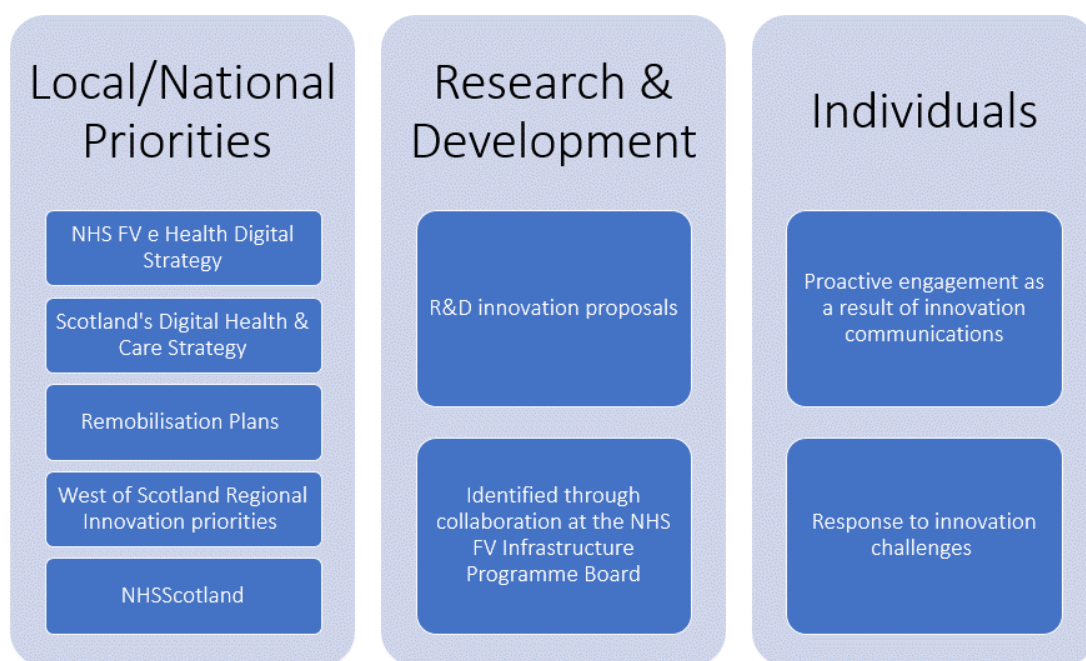
FV Quality as a corporate function also works with our growing community of local innovators to scan for and attract opportunities for innovation projects and connecting them to the appropriate contacts within the innovation ecosystem.

Innovation Approach in Forth Valley

Our aim is to implement a standardised and disciplined way of supporting and delivering innovation within NHS Forth Valley. This includes both internal innovation and learning and adapting innovative ways of working from other industries. All innovation will align with organisational priorities and the Scottish Government National Performance Framework.²

The scope of innovation encompasses services and teams within NHS Forth Valley, care and support delivered by our Health and Social Care Partnerships and innovation collaborations with other NHS Boards and partner organisations.

There are a number of sources identified below that innovation can come from. Each of these sources will be generated by a both proactive and reactive activities.



Once a project is submitted to the Innovation Team the diagram below illustrates the project

² <https://nationalperformance.gov.scot/>

milestones as it progresses towards Business as Usual.

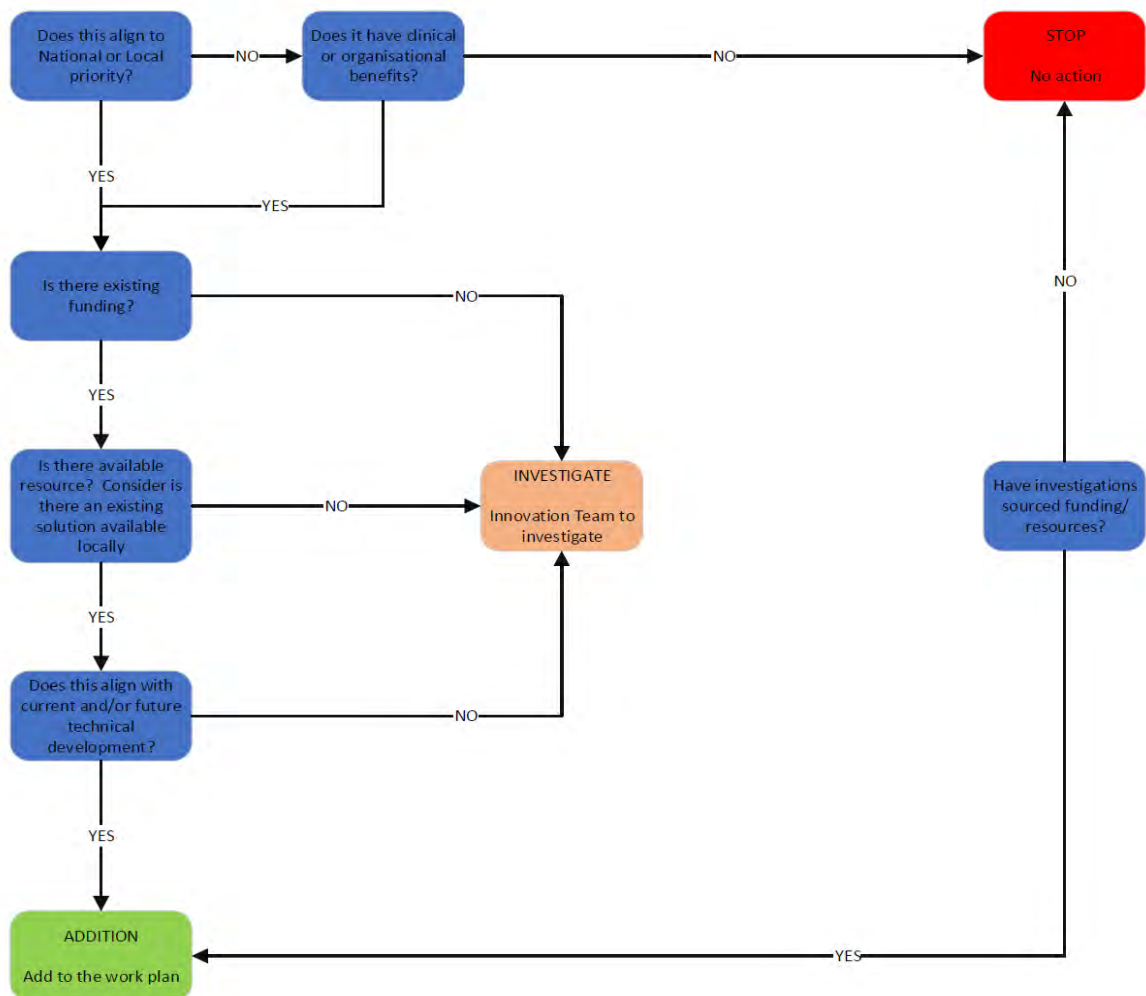


Innovation Prioritisation

There is a need to identify, prioritise and plan this activity to ensure that delivery aligns with the demands and priorities of NHS Forth Valley. Following the Push and Pull Model below will allow for the opportunity to recognise the advantages of various sources, whilst ensuring projects still meets the needs of the organisation.

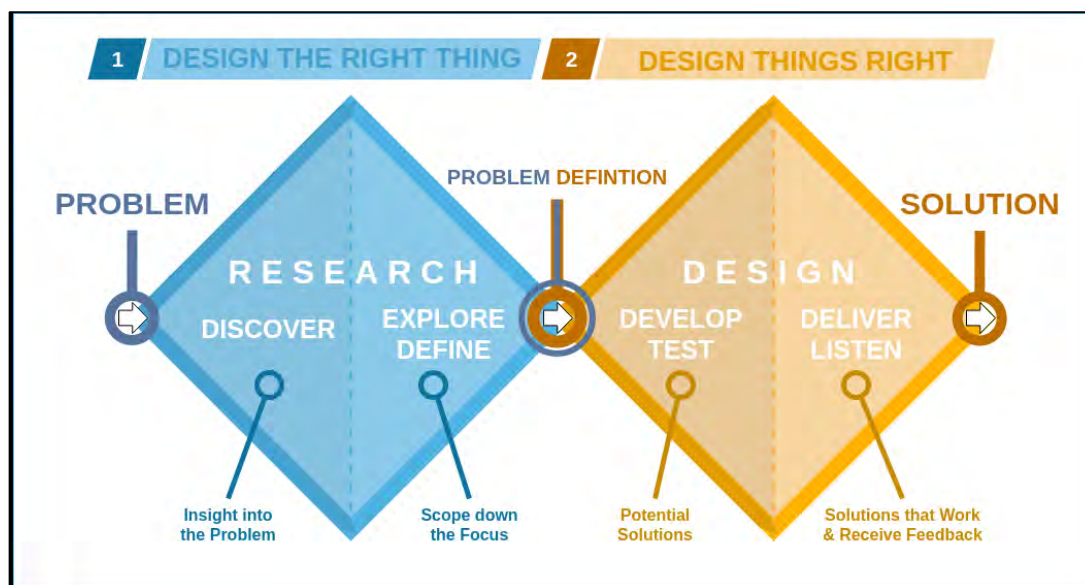


To this end all projects will be assessed against the following project selection matrix.



Project Approach and Support

The Scottish Approach to Service Design³ provides the framework for innovation project management and support to innovators, with a specific focus on the double diamond approach.



This approach is currently being tested as part of our ongoing development of our Innovation toolkit, an example of this working in practice is highlighted below

Dermatology AI Skin Cancer 48 x 22			
Aim : diagnose skin cancer within 48 hours by end of 2022/23			
Discover	Define	Develop	Deliver
<p>Discover: March 2021 – Oct 2021</p> <ul style="list-style-type: none"> • Deloitte & DHI User insights, pathways, AI use cases • Programme funding • Market landscape Reviews NSS & DHI • Technical Analysis iCAIRD • Primary/Community Care Model • Research 	<p>Define: Nov 2021 – August 2022</p> <ul style="list-style-type: none"> • Scope proof of concepts – initially in at least 2 Boards • Community, Locality, GP Practice models for capture of images to use in Advanced Clinical Referral Triage and support people to self manage. • A minimum set of standards and specifications for image capture, metadata, data storage, CHI integration, authentication • Minimum standardised technical infrastructure and architecture to enable clinical care and support and enable machine learning and AI 	<p>Develop: Sept – Dec 2022</p> <ul style="list-style-type: none"> • Building innovation collaboration, competitions and learning network • Develop and test prototype and operational model of care and support • Develop standardised capture of image & information, annotation, anonymisation, define interoperability standards, integration with electronic patient record & other systems where needed, transfer to data storage/loch 	<p>Deliver: By end of 2022/23</p> <ul style="list-style-type: none"> • Delivery of a community model and transformation of pathways of care and support across Scotland • Deliver a high volume pipeline of safe and secure images, image database and data linkage capability ready for machine learning, for research • Clinical and operational database integrated with board systems • Agile adoption across Scotland

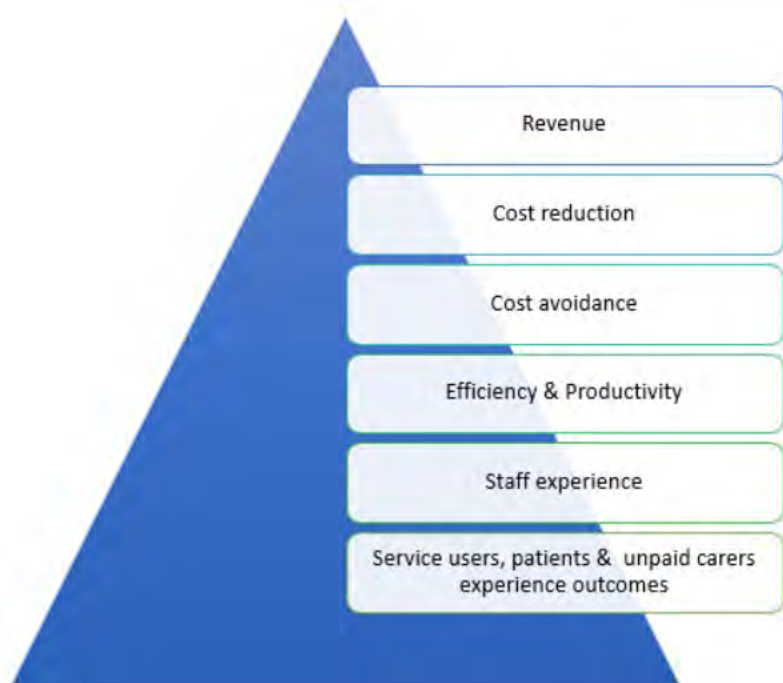
³ <https://www.gov.scot/publications/the-scottish-approach-to-service-design/>

The Innovation toolkit will provide the structure and guidance for all projects. (See Appendix 1.)

Evidence of Value through Innovation

Aligning our Innovation approach with the Quality Strategy we will demonstrate our successes in Innovation by using the East London NHS Foundation Trust (2018)⁴ framework for evaluating the Return on Investment (ROI) in healthcare.

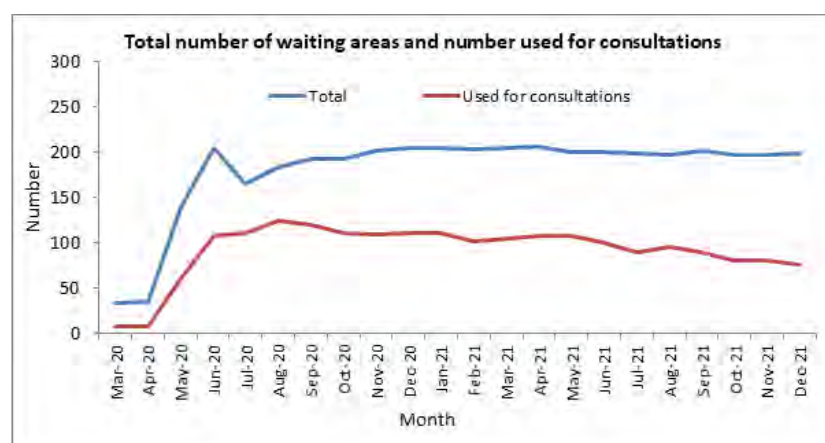
The framework defines six key areas, aligning strategic priorities to improving outcomes and experience. We will adapt and adopt this model to help us better demonstrate return on investment. Some examples are given below



"In FV, 41 shielding patients received dermatology outpatient care from the safety of their home. In addition, 218 virtual consults in FV were carried out from home by the clinician, highlighting the potential for Digital Dermatology Appointments (DDA) to provide a flexible alternative to traditional working patterns"

"Our patients quickly became engaged with Florence, it is very user friendly. Feedback has shown that patients now feel more involved in managing and understanding their own health. Additionally, the automatic calculation and drop into Docman of the average of 7 day BP readings has been a huge time saver for our practice nurse team who can now focus more time on direct patient care"

Near Me



⁴ <https://qi.eft.nhs.uk/resource/building-the-business-case-for-quality-improvement-a-framework-for-evaluating-return-on-investment/>

Innovation Governance

At the core of our approach to developing innovative solutions is doing this in collaboration with our staff, academia, industry partners and third sector. This will enable us to identify the problems faced by patients, staff, and citizens in receiving and delivering high quality, effective and efficient health, and care services, whilst also maximising opportunities for individuals to better self-manage existing conditions as well as preventing their occurrence.

To help ensure our resources are channelled, supported and managed appropriately, an Innovation Governance Group has been created and embedded into both the corporate and clinical governance structures and is aligned to the e-Health Digital Delivery Plan. This governance group ensures that we have a consistent cycle of innovation delivery so that users know how and when delivery will occur. The main purpose of the governance group is to review any new proposals, locally, nationally, and regionally.

The Innovation Governance Group;

provides a shared resource for innovation projects and new developments that might merit an injection of development, investment, and eHealth support,

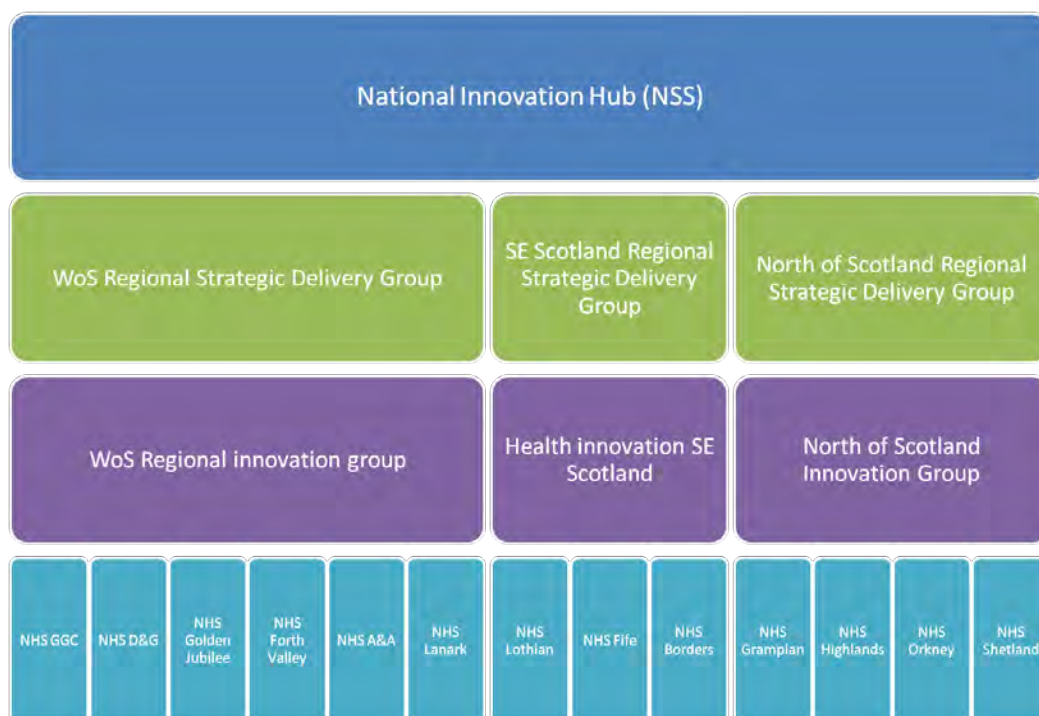
allows for a mechanism for the implementation of any potential solution that requires a robust digital IT infrastructure, and

develops a plan to create capacity to support the implementation of digital and non-digital innovations and proactively review how we track/anticipate the pipeline of innovation projects within NHS Forth Valley.

Key stakeholders identified to support this structure highlighted below



Innovation is governed at a Regional level within Scotland, with NHS Forth Valley participating in the West of Scotland Regional Innovation Group. The regional innovation is arranged as illustrated below:



Innovation Culture

Building a Culture of Innovation is an organisational wide endeavour and a capability that requires a multi-disciplinary approach. Innovation requires the right ecosystem to merely exist and the optimum conditions to really thrive.

A key factor enabling our organisation to embrace innovation and create a responsive and reactive environment is to have a culture that ensures that individuals are empowered to take decisions and be proactive in their own areas, supported by agile governance processes and appropriate levels of authority to operate.

This aligns to the inclusive principles set in the Scottish Approach to Service Design ⁵-

Connecting with colleagues in other departments in the planning stages will ensure there is sufficient time in their work schedules. We will review our current projects and our plans for horizon scanning in the short, medium, and long term which will allow for prioritisation of projects.

⁵ <https://www.gov.scot/publications/the-scottish-approach-to-service-design/pages/the-design-process/>.

As part of this we will look to identify service re-design plans, recovery and remobilisation, service transformation, and link to the Scottish Government to find innovative solutions to potential internal challenges. A key factor in the success of all innovation projects is their transition to Business as Usual, each project will need to have a full implementation plan as it is handed over for operational use.

NHS Forth Valley's Innovation plan will enable the organisation to create the conditions and culture to support sustainable Innovation to improve outcomes and experiences for all.



INNOVATION
STRATEGY



INNOVATION
LEADERSHIP



INNOVATION
CULTURE



INNOVATION
PROCESS

How do we embed technology in our everyday practise

Procurement

We have established working relationships with national and local procurement colleagues to support the transition of projects to Business as Usual and where appropriate include the relevant expertise in our project working/governance groups.

Our approach will focus on the necessary evaluation input and demonstrate return on investment to support Business Case development for future adoption and procurement.

As highlighted in the recent Campbell Report⁶ commissioned by Scottish Government, there is an importance for Health and Social Care to work in partnership with innovative start-ups and scale-ups in the Scottish Small/Medium enterprise (SME) base and closely with industrial collaborators to ensure procurement has a connected national approach. Existing projects with NHS Forth Valley already have a collaborative approach with industry via the Dermatology AI Consortium and our Eye Health SBRI. We will continue to seek opportunities to procure within the Scottish SME base, using challenges and competitions promoted through the health innovation and health technology ecosystem.

Medical Device Regulation

To support our Innovation plan we will work with partners in SHIL to implement an ISO13485 Quality Management System (QMS)⁷ for medical device regulation. The QMS

⁶ <https://www.gov.scot/publications/campbell-report-roadmap-investment-health-innovation-life-sciences-healthtech-scotland/>

⁷ <https://www.iso.org/standard/59752.html>

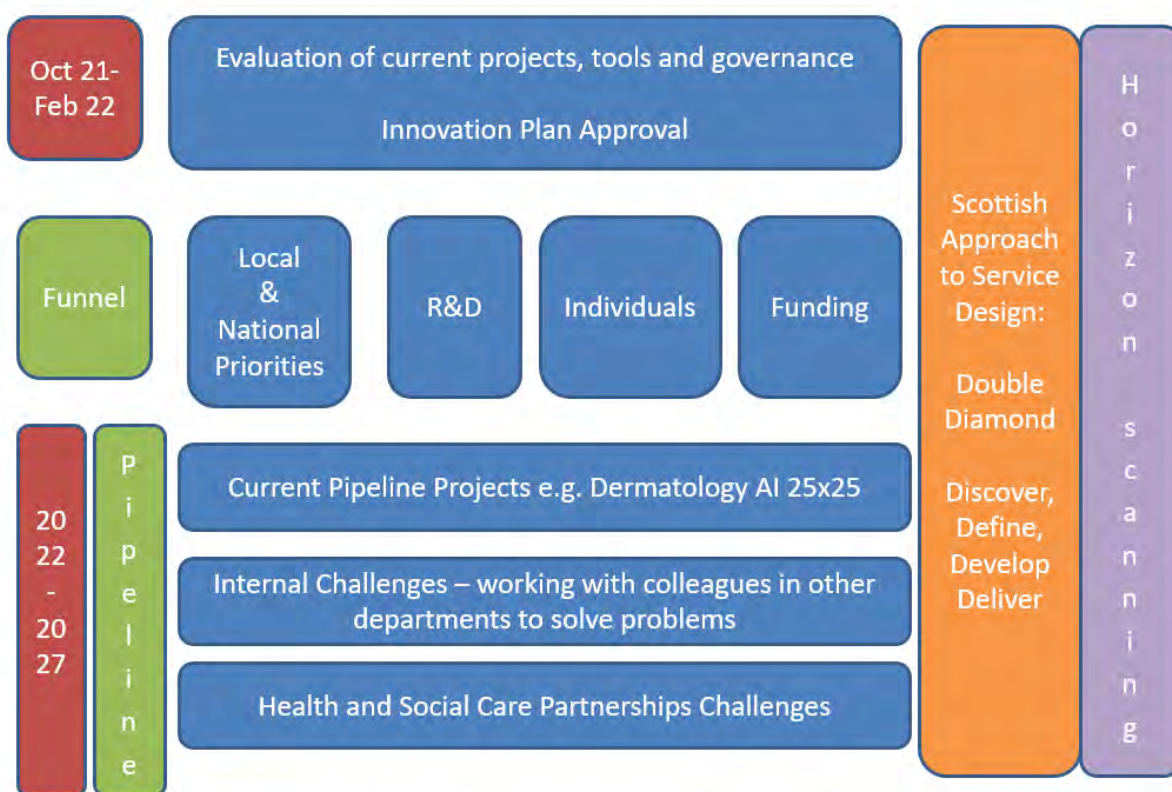
system will enable us to demonstrate the ability to provide medical devices that have a consistent approach to meeting both service and regulatory requirements.

Communication and Engagement Strategy

Innovation will utilise existing communication mediums to source opportunities and funding, as well as celebrating success and promoting our portfolio of completed projects, both internally in NHS Forth Valley and nationally. To this end a targeted communications and engagement plan has been created and will be used throughout the year to ensure internal and external stakeholders are aware of the progress of projects and transition to Business as Usual. We will also work with the regional hubs and national organisations to horizon scan for opportunities to promote our projects. Working with SHIL in October 2021 in this manner, secured the Dermatology AI Consortium and article in the Holyrood magazine.⁸

The Way Forward

To support the Innovation Plan, the diagram below illustrates Innovation Delivery with NHS Forth Valley over the next 5 years.



⁸ <https://library.myebook.com/holyrood/holyrood-473/3657/#page/20>

Appendix 1

Name of referrer	
Date of request submitted	
Department	
Project title	
Service Area	
Funding secured	<input type="checkbox"/> Yes <input type="checkbox"/> No <i>Double click on check box and set default value to 'checked'</i>
Email Address	
Contact Number	

The below table provides the scoring criteria that assessors will use to assess questions in the innovation screening matrix on page 2.

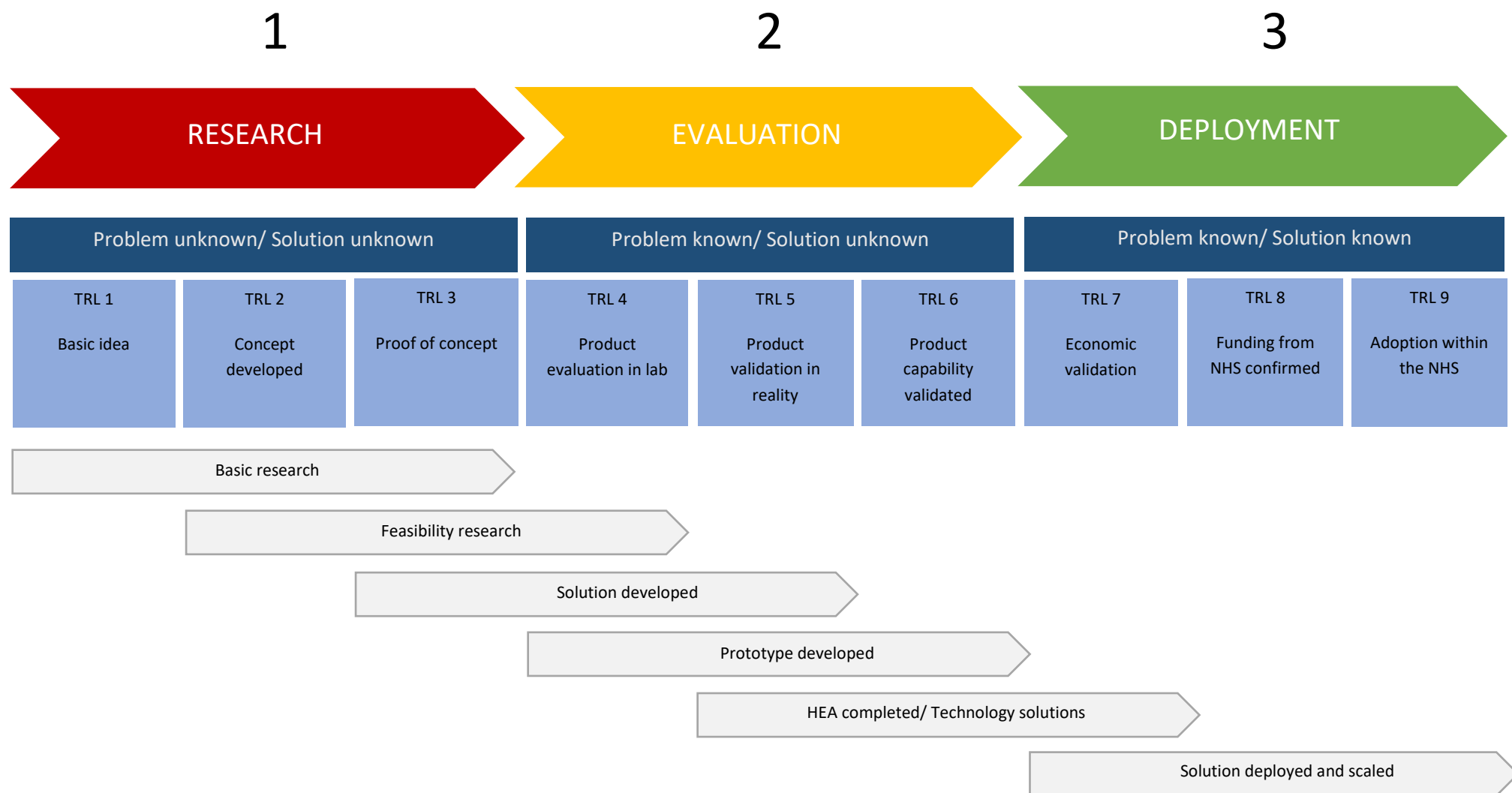
Very Poor answer	Poor answer	Acceptable answer	Good answer	Excellent answer
1 – 2	3 – 4	5 – 6	7 – 8	9 – 10
<ul style="list-style-type: none"> • Failure to answer the question • No / very weak evidence provided with no added value demonstrated • No innovation opportunity identified • No evidence of stakeholders • No evidence of funding provided 	<ul style="list-style-type: none"> • Response is vague / incomplete • Weak evidence provided with little added value demonstrated • No feasible solution proposed • Some stakeholder involvement has been considered • Currently preparing a request for funding 	<ul style="list-style-type: none"> • Basic evidence provided to show potential for innovation • Response demonstrates understanding of the service area and need to innovate • Stakeholder analysis undertaken • Evidence of request for funding submitted, working on other elements of Need consideration for BAU 	<ul style="list-style-type: none"> • Good evidence provided demonstrating real value for improving outcomes for patients and / or staff within the service • Good proposal for genuine innovation / problem-solving opportunity identified • Good identification of stakeholders who will be involved, yet to seek engagement • Funding confirmed, no evidence of ongoing funding or BAU 	<ul style="list-style-type: none"> • Rich evidence provided demonstrating value for patients / staff within the service • Response is well thought-through and presented • Genuine innovation potential identified • Stakeholders identified and actively sought out partnerships • Funding confirmed, evidence of consideration for

				long term funding and BAU
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	Complete with information from submitted proposal	Assessor comments	Assessor score (1-10)	Total score (Out of 60)
What – What is the innovation opportunity and what additional value will this bring?				
If you have an existing idea/solution, please reference which stage this is at against the steps in the Technology Readiness Level (TRL) chart (see page 4) – identifying the starting point of your current idea/solution and the planned end point.				
<p>Why – Why would you want us to pursue this?</p> <p>This could include but not limited to:</p> <ul style="list-style-type: none"> • Current pressures or challenges in this space (e.g. patient numbers, waiting times, lack of digital solution) • Impact on services • Cost savings • Effect on quality of care/service 				

When – When would you want us to do this / how long will this be for?				
Who – Who will require to be involved in this innovation opportunity?				
Where – Where will this innovation occur?				
How – How will this innovation be progressed and how will it be funded?				

Table 1. Technology Readiness Level (TRL) chart



ID	Insert new row below	Task	Owner	Date from	Date to	% Completed	week beg	01/01/2021	01/02/2021	01/03/2021	01/04/2021	01/05/2021	01/06/2021	01/07/2021	01/08/2021	01/09/2021	01/10/2021	01/11/2021	01/12/2021	01/01/2022	01/02/2022	01/03/2022	01/04/2022	01/05/2022	01/06/2022	01/07/2022	01/08/2022	01/09/2022	01/10/2022	01/11/2022	01/12/2022	01/01/2023	01/02/2023
			Version 0.2d	01/12/2018		0.0																											
1	Dermatology Pilot DDA- BAU- Systems support		CM	01/01/2019		0.0																											
2	Ophthalmology (Optometry Shared Care)		EW	01/01/2020	31/05/2022	50.0																											
3	SBRI Eye Health		WN/JZ	01/03/2021	01/06/2022	50.0																											
4	Open Eyes		JZ			0.0																											
5	OPERA		EW	11/01/2021	10/01/2022	0.0																											
6	Heartflow		WN	01/06/2022		0.0																											
9	Health & Wealth building		SB			0.0																											
10	Florence - project support		DAL	01/12/2018	30/12/2021	95.0																											
11	Near Me - BAU Systems analyst		SB		01/04/2021	0.0																											
						0.0																											
	Remote Health Pathways					0.0																											
7	RHM : Asthma		WN	01/05/2021		0.0																											
	RHM: Prostate		WN			0.0																											
8	RHM : IBS		WN			0.0																											
	Florence transition to RHM		DAL			0.0																											
	RHM COVID					0.0																											
	RHM Long Term Conditions																																
	Near Me																																
						0.0																											
	Dermatology					0.0																											
12	Dermatology Consortium		SB			0.0																											
12.1	AI Derm 25x25		WN/JZ	08/03/2021	04/01/2025	0.0																											
12.2	AI Derm 48x22		WN/JZ	16/05/2021		0.0																											
						0.0																											