



Health and  
Social Care

# Digital Innovation Strategy

HSC Northern Ireland 2022-2026

# Contents

Strategic Context	Introduction	<u>3</u>
	Our Innovation Landscape	<u>4</u>
Our ambition	Vision, Mission & Principles	<u>7</u>
	Delivering our Strategy	<u>10</u>
How we will deliver	The Digital Innovation Hub	<u>16</u>
	Our Partnerships	<u>23</u>
What will we need	Innovation Enablers	<u>25</u>

# Introduction

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Advances in technology, and the growth in its use, means we need a constant focus on what is coming next. Northern Ireland is well placed to support the development, design, testing and – ultimately – the adoption of new technology. This ranges from advances in artificial intelligence (AI), 5G, Internet of Things (IoT), through to the apps, tools and products that we increasingly use in our everyday lives, such as smart connected devices in the home and the ever more powerful devices in our pockets.

How we work with and influence some of these important developments in technology will be key to ensuring that they put our population’s wellbeing at their core. This will rely upon shared knowledge, expertise and understanding across a wide range of sectors.

**This digital innovation strategy, the first for health and social care in Northern Ireland puts in place a structure and key considerations for digital innovation by:**

- **Assuring innovation is aligned to the HSC identified service priorities**
- **Creating a “digital innovation hub” which will support the adoption and scaling of digital health and care innovation**
- **Developing stronger partnerships across the HSC and with those who support it**

## Where our Digital Innovation Strategy fits in

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The importance of digital innovation has been highlighted in recent reports.

In the *Delivering Together – Health and Wellbeing 2026*, the ambition to keep pace with innovation is well articulated:

***“[Digital Innovation] will mean access to cutting edge technology and therapies..... To do so requires further collaboration between HSC, academia and industry. The HSC can only play its part if it can provide the centres of expertise and excellence that will continue to attract partners, and support the recruitment and retention of experts in their fields.”***

The [NI Innovation Strategy](#) as part of its vision:

***“Northern Ireland, by 2025, will be recognised as an innovation hub and will be one of the UK’s leading high-growth, knowledge-based regions which embraces creativity and innovation at all levels of society.”***

## What do we mean by Digital Innovation

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The World Health Organization (WHO) explains that health innovation *“improves the efficiency, effectiveness, quality, sustainability, safety and/or affordability of health care”*. This definition includes new ideas, practices or objects whose application leads to added value, such as better health and care outcomes or savings. With interest rising in digital health, people are increasingly focused on answering a critical question: how can we execute digital health innovations efficiently and effectively that truly impact the quadruple aim. This strategy will set out the structures and processes that need to be in place for HSC to successfully adopt and implement digital health innovations.

# Our Innovation Landscape (1/2)

**The purpose for the Digital Innovation Strategy is to communicate to our people and the population that innovation in digital health products, services and processes is valuable and important. We have seen that digital innovation when harnessed appropriately can deliver benefits in patient safety, improve patient care and outcomes and enhance access and service delivery through enhanced processes and services.**

## **Current Challenges & Opportunities**

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There have been, and still exist, a number of historical barriers to digital innovation. These reflect the wider challenges facing public health and HSC around access to funding and investment, lack of joined up thinking and clear governance, data access and technology challenges, lack of a streamlined partnership approach and a culture that doesn't encourage innovation. We talk more about these challenges and our response in the *Innovation Enablers* section of this document. The intention of this strategy is to start shifting the mindset and culture around digital innovation and begin addressing the above challenges by bringing a streamlined approach and facilitating engagement with the ecosystem. We will do this by formalising the digital innovation pathway through the creation of a Digital Innovation Hub that will have clear and transparent governance and will engage with the ecosystem through its horizon scanning function.

The hub will have a set of processes around digital innovation that currently happens in a disjointed way across Trusts, ICPs, ALBs, research bodies and other organisations where it is up to individuals or teams to implement and spread innovation. From our engagement, we know that this type of innovation often fails to spread owing to a lack of dedicated process, focus, resources and time. This is especially important with numerous examples of localised digital innovation that took place during the pandemic.

Digital Innovation is also the key for our current digital portfolio and large programmes like encompass where continuous engagement around digital innovation and user experience will help define its future success and maximise future opportunities.

Now more than ever is the time for us to begin **championing a streamlined approach** to digital innovation across our ecosystem. There is clear interest, many opportunities and enthusiasm around innovation in many of our partner organisations, and by working together with academia, citizens, public and private sectors we can ensure that we are leveraging the efforts of many to provide a clear plan for future collaboration. The Digital Innovation Hub will be at the centre of this initiative by being the 'face' of digital innovation at HSC and becoming at once the forum and the delivery mechanism for all stages of digital innovation from opportunity identification, all the way to piloting and spreading good practice.

# Our Innovation Landscape (2/2)

## COVID-19 response

During the pandemic, the use of digital became essential to the pandemic response. We saw new digital technology being adopted by staff and our population at astonishing pace. A "Digital First" agenda was accelerated and delivered Covid related Apps, HSCNI Apps library, online booking platforms for Covid tests and vaccinations, information systems to support contact tracing and vaccination programmes as well as data dashboards updated daily. The population adapted quickly to using online platforms and management information systems that supported contact tracing and vaccination programmes enabled more responsive services.

Daily data analysis was undertaken to produce relevant statistics on the COVID NI Dashboard. Our people were enabled to work remotely and care for people virtually via telephone and video. An HSC Apps library was set up to enable citizens to view and download safe trusted Apps supporting a range of services

including to support physical and mental health wellbeing and management of long term conditions like diabetes. To achieve these outcomes, urgent investment in digital technology, clinical expertise and digital innovation and skills from non-HSC academic and industry partners was brought in to work alongside HSC staff.

Building on these lessons from the pandemic, we now have the opportunity to continue our success by delivering transformative and long lasting capabilities in digital innovation into the HSC. The creation of a Digital Innovation Hub will allow a sustained and consistent approach to support the identification, prioritisation, piloting and scaling and sharing of innovation. Below is an example of successful and rapid adoption of innovative digital initiatives that will ensure that learning from alternative ways of working will be incorporated in service developments moving forward.

## Telephone Triage & Video Consultation

The use of telephone triage and video consultations is now widely embedded within the primary care sector. It is clear that this triage addresses issues for a significant number of patients, thereby reducing numbers needing a more detailed consultation. Where a face-to-face appointment is not necessary, video consultations provide a more efficient model of GP to patient contact and the widespread use of technology should be incorporated into the service going forward. This consequently reduced pressures on GP surgeries. The outcome has delivered a transformational impact and there are therefore clear benefits to continuing this operating model.

## COVID-19 Products

Working with our digital supplier partners, universities and subject matter experts during the pandemic a number of digital products were developed at pace to ensure the safety of our population. At the height of the pandemic the digital Contact Tracing Service, incorporating digital self trace and the COVID proximity app ensured public health measures were taken across NI. The Vaccine Management System, ensured online booking of appointments for our population and the recording of 1.7M vaccines, while the certification app allowed people to validate their vaccination status.



# Vision

**Our vision for innovation was co-designed with stakeholders from across the health and social care ecosystem and aligns closely to the wider ambition set out in our Digital Strategy.**

**To position HSC as a place that excels at encouraging and harnessing digital innovation in order to improve the delivery of services and the health & wellbeing of the population of Northern Ireland.**

The vision seeks to identify existing digital innovation best practice, and enhance our ability to pilot and scale initiatives, secure funding and investment, and form partnerships with industry, academia and government. It recognises that digital innovation can radically improve health outcomes if it is supported by sufficient investment in governance, data use, access to funding and workforce capacity.

## Our Innovation Goals

Our priority will be to streamline our approach to digital innovation through the ability to pilot, scale and spread innovative ideas, identify routes to funding and investment, and put in place a culture that is conducive to meet the vision and achieve the desired transformational outcomes. We will hold periodic reviews to measure the outcomes and outputs.



A coherent approach and pathway to pilot, scale and spread digital innovation activities that meet our strategic goals and objectives



Collaboration with internal and external partners to scan for opportunities and identify innovative funding solutions



Accelerate adoption of digital solutions in health and social care, including facilitating access to data and technical integration



# Mission & Principles

While our vision outlines our ambition, our mission focuses on how we plan to deliver it. It communicates our direction of travel over the next 4 years and lays out the principles that will guide us.

## Our Mission

**To establish the Digital Innovation Hub as a centre of excellence for scoping, prioritising, piloting and scaling innovation in digital health products, services and processes.**

In order for digital innovation to be genuinely impactful and deliver tangible benefits we need to identify and focus on digital innovation activities which are aligned to HSC's vision and strategy including the transformation and policy agendas.

To maximise the value of digital innovation we need to provide adequate support and resources at each stage along the innovation pathway, focusing specifically on health innovation that has strong evidence of benefit and addresses improvements in public health and wellbeing.

## Our Innovation Hub Principles

Through engagement with external and internal stakeholders, we have identified five innovation principles to set the direction for the design of the Innovation Hub, prioritising our patients, staff, and partners.



### User focused

Aligning all activities to focus on outcomes for the patient/service user, with wider alignment to the HSC strategic priorities, including the transformation agenda.



### Connected

Working collaboratively with our partners, service users and staff to co-design solutions. Establishing a common approach to engagement with stakeholders in the digital ecosystem.



### Agile

Creating a safe and creative innovation environment, using agile methodology to trial and test solutions, establishing multi-disciplinary teams and championing continuous improvement.



### Data driven

Ensuring connectivity and technology integration around data and utilising evidence-based approaches underpinned by strong analytics capability.



### Adaptable

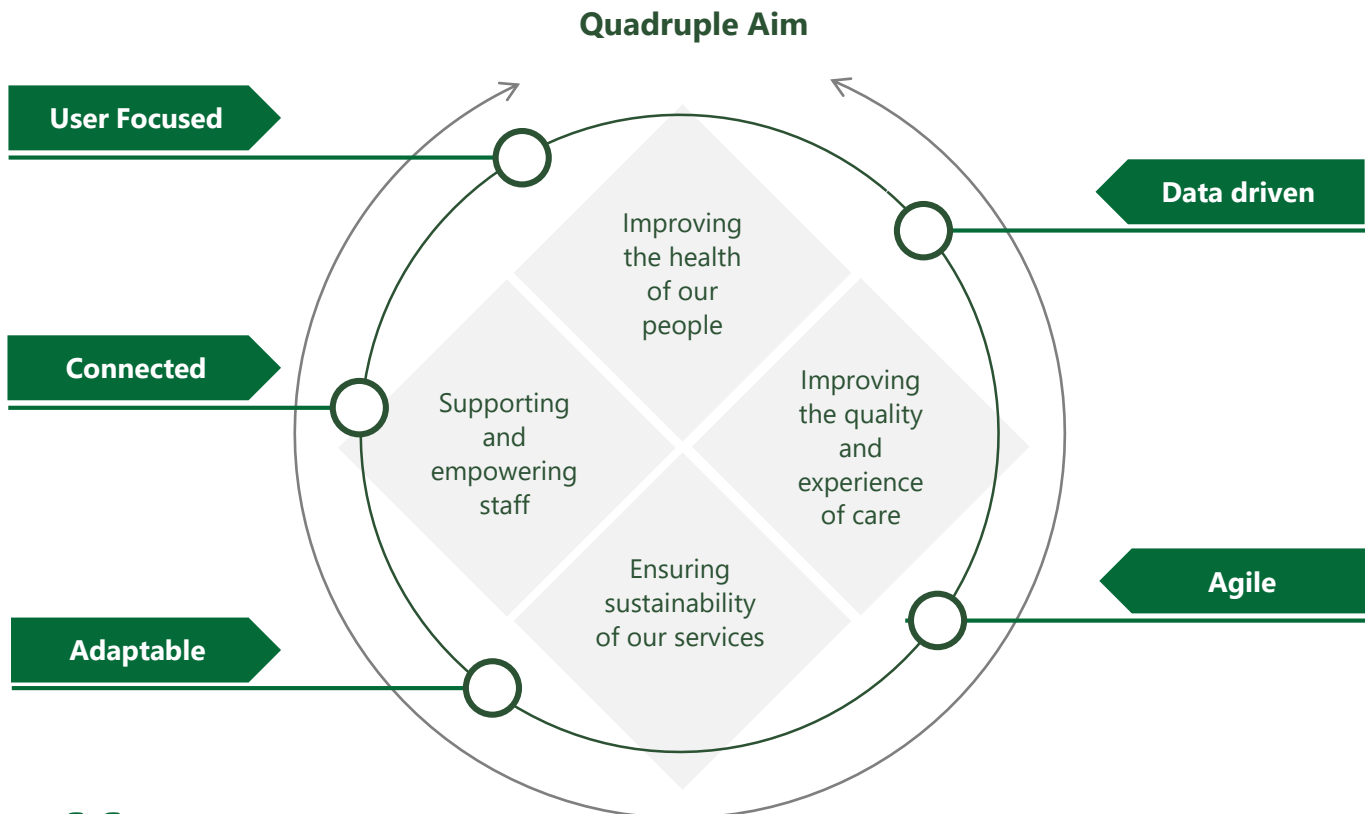
Working flexibly around delivery goals, establishing continuously moving goal posts and pushing the boundaries of what is currently possible.



# Supporting the Quadruple Aim

**Our five Innovation Principles align to and support HSC's wider Health and Wellbeing Strategy, specifically the 'Quadruple Aim' and existing and complementary strategies.**

In order to deliver greatest value in our innovation projects, and facilitate transformation that is cohesive and directed, our priorities must align to the Quadruple Aim. Our approach to digital innovation will be driven from multiple sources and relies on a joint effort to develop and implement improvements.



**“Modern research shows that outcomes for patients requiring complex or specialist treatment improves where high levels of specialist expertise is available and these teams are able to keep pace with innovation”**

– Health and Wellbeing 2026: Delivering Together

## Understanding and aligning the requirements of Digital Innovation

This Innovation Strategy will form part of a suite of documents that articulate the digital transformation for HSC, with innovation forming a crucial component. Other documents in this series include **digital, data and cyber strategies**. Delivered together, these strategies reflect on how to deliver the Department of Health's wider strategic goals, and will enable us to build a coherent and sustainable future for HSC. We will rely on quality digital tools and systems, accurate and interoperable data, and the security and timely protection of health and care information to help underpin and support the delivery of our innovation initiatives.



# Delivering Our Innovation Strategy

How we will design our strategy

# Our Strategic Framework

We have established a transformation roadmap that is underpinned by four strategic outcomes. These outcomes will be delivered through the development of the Digital Innovation Hub capability and enablers. This strategic framework acts as a foundation to contextualise and ground the innovation strategy, ensuring that our transformation is rooted at all times in our overall vision for innovation at HSC.

**Vision**  
*Our overarching aim*

To position HSC as a place that excels at encouraging and harnessing digital innovation in order to improve the delivery of services and the health & wellbeing of the population of Northern Ireland.

**Mission**  
*How we will deliver it*

To establish the Digital Innovation Hub as a centre of excellence for scoping, prioritising, piloting and scaling innovation in digital health products, services and processes.

**Strategic outcomes**  
*The results we want to achieve*

The Digital Innovation Hub will provide a **coherent approach and pathway for digital innovation** activities that meet our strategic objectives and prioritisation approach.

The Digital Innovation Hub will provide a **safe environment** in which prioritised initiatives can be built, tested and piloted before progressing to the scale and spread stage.

The Digital Innovation Hub will **engage with internal and external stakeholders** to scan for future opportunities, explore innovative funding solutions and develop mutually beneficial partnerships across different sectors and industries.

The Digital Innovation Hub will **lead the way** in accelerating the adoption of innovative digital solutions in health and social care in Northern Ireland.

**Capability groups**  
*Groupings of technologies and processes required to deliver our strategic outcomes*

## HSC Digital Innovation Hub Capability

**Build Foundations & Identify Opportunities**

**Incubate, Test & Accelerate**

**Scale, Deploy & Learn**

People & Culture

Funding

Governance and Decision-making

Data & Technology

**Foundational enablers**  
*The foundations required to deliver the strategic outcomes*

The development of the Digital Innovation Hub will serve as a key capability to bring together complementary processes around the innovation pathway that will deliver our strategic outcomes. Our foundational enablers are those attributes that we must have as a system to enable successful implementation of our innovation strategy. They specify the changes we need to make in the system to enable innovation to thrive, to establish a culture that transcends silos and works collaboratively to bring digital innovation to the forefront of our work in health and social care.

# Our Strategic Outcomes

The creation of the Digital Innovation Hub will help formalise the activities and processes around each stage of the innovation pathway. Our approach has been reflected in our four strategic outcomes - critical focus areas that will help set us on the path to embedding innovation. We will also develop supporting approaches around governance, funding and stakeholder engagement to enable the hub to gradually become a centre of excellence. In doing so, we can ensure digital innovation becomes part of our culture and every day thinking, enabling us to deliver better care for people and patients in more accessible and responsive ways.

Our priority will be to lay the building blocks for the Digital Innovation Hub, including continuing to create an environment and culture that is conducive to innovation. We will work in an agile and safe manner, finding the best and quickest path to deliver each stage of the innovation pathway. The following pages will outline the functionality of the hub.

## Our Strategic Outcomes



The Digital Innovation Hub will provide **a coherent method and pathway for digital innovation** activities that meet our strategic objectives and prioritisation approach.



The Digital Innovation Hub will provide **a fail safe environment** in which prioritised initiatives can be progressed, tested and piloted before progressing to the scale and spread stage.



The Digital Innovation Hub will **engage with internal and external stakeholders** to scan for future opportunities, explore innovative funding solutions and develop mutually beneficial partnerships across different sectors and industries.



The Digital Innovation Hub will **lead the way** in accelerating the adoption of innovative digital solutions in health and social care in Northern Ireland.

# Our Strategic Roadmap

The lynchpin of our digital innovation strategy is the creation of the **Digital Innovation Hub**. One of the hub's key design principles (see page 9) is to be adaptable. For us this means not waiting until we achieve the perfect model or design in order for the hub to bring value, test and disseminate digital innovation. Like the Digital Strategy, our phases are not designed to be implemented in isolation and will overlap. There will be some overlap between the design, development and refinement phases. This is in line with the wider Digital Strategy which will seek to implement, optimise and innovate in differing ratios during its 8 year implementation phase. The development of the hub over the next 4 years will reflect this pattern of iterative and sustained development in terms of scale and ambition over time.

## Our Strategic Roadmap for the Digital Innovation Hub



### DESIGN

We invest our time and resources in **designing and implementing the operating model for the Digital Innovation Hub together with the supporting business case to stand it up**. This phase will also look to address a number of the capability and enabler requirements that will support the hub, as well as key processes around innovation that already exist and that can be streamlined as part of the hub.

### DEVELOP

We invest our time and resources in **developing all functions, processes and activities** of the hub. This is a chance to test the design of the hub by beginning to drive innovations through the pipeline whilst identifying crucial success and pain points. The lessons and momentum gathered during this phase will help us start to run the end to end digital innovation cycle from 1. best practice collation, 2. pipeline prioritisation, and moving towards 3. testing and scaling.

### REFINE

We invest our time and resources in **refining and improving** all elements of the Digital Innovation Hub, from its design to its operational reality. Particular pain points should be identified and prioritised and successes acknowledged and disseminated locally and globally where appropriate. There should be continuous work to create an 'enabling' ecosystem and support the hub through a focus on identified systemic enablers such as culture, governance, funding and access to data and technology.

### Box 1. Our three-phased approach for digital transformation

Our strategic roadmap is in line with the a three-phased approach taken in our digital strategy. This is to ensure that our organisation-wide transformation efforts are co-ordinated and aligned to make efficient use of available resources and to facilitate cohesive systems and services for our H&SC staff and patients.

# Integrating our strategies

**A service transformation of any kind would not be complete without innovation. Therefore, our innovation strategy must sit alongside – and build on – digital, data, cyber and workforce strategy work that is being implemented in parallel. Each of these areas require innovation for continued optimisation and service improvement, and therefore this strategy ties together our collective priorities for building and growing on our foundations.**

There are four key strategies that are tied to our work in innovation – in this section we explore the relationships between the strategies and how innovation must be leveraged to help them grow.

## Digital Strategy

Our digital strategy outlines many transformational programmes and initiatives that will change the way in which digital technology is used at HSC. For our services to grow and improve, keeping pace with the new tools and technologies that become available, innovation will remain a key priority.

## Cyber

Cyber security is key to the safety and continuity of our online services, and the safe storage of our patient data. We must innovate within cyber security to prepare for new and unrecognized threats, so that we can maintain the trust and peace of mind of the people of Northern Ireland.

## Data

Data is a key enabler for innovation, generating insights that help us to understand service needs and requirements, as well as gap analysis and impact measurement. Our data strategy outlines ways in which we will improve the quality and usage of data collected at HSC.

## Workforce

For any new intervention or project to be successful, our people must need, understand and want to implement the solution. We must also support our staff to innovate and collaborate in multi-disciplinary and multi-organisational teams.



Innovation has a part to play in all of the supporting strategies described here, with a key role in **building and developing** beyond existing capabilities, and **preparing our services for the future**.

Our Innovation strategy – and the Digital Innovation Hub we will implement – will facilitate this through agile working and bringing together across sectors. We discuss the blueprint for the hub in the next section.

# Our Digital Alignment

**Our Innovation Strategy is part of a wider digital transformation taking place across HSC (See HSC Digital Strategy). A key dependency exists between these two strategies, as the innovation projects that we choose to scale must align to our digital priorities, and the projects themselves may rely on the new digital tools and services that will be implemented. Innovation and innovative thinking is also key to the cultural change that is described in the digital strategy.**

The table below describes how our innovation strategy will support all the strategic outcomes of the HSC Digital Strategy.

## The Digital Strategic Outcomes

## Innovation



Digital will provide patients, clients and their carers greater visibility and control over treatment and care journeys



Digital solutions will put quality and safety at the heart of all new processes, systems and ways of working across health and care pathways



Effective and joined up care through systems integration and streamlined information flows



Digital will enable health and social care professionals and staff to work more efficiently and collaboratively across standardised systems



Intelligent use of data will optimise performance and harness population health insights, whilst ensuring robust data protection standards



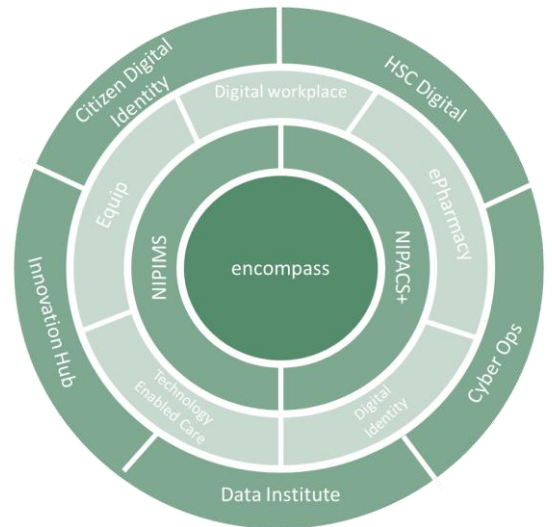
Digital will support the acceleration of research and innovation to gradually embrace system leading disruptive and cutting edge solutions



# Innovation and our digital portfolio

**Our transformation journey is one we must take in collaboration with partners from across our health and social care system. We recognise the importance our population, our people and our partners in supporting health and social care in design, delivery and adoption of our digital solutions.**

The digital transformation of HSC is built around key priority programmes and supporting initiatives, which will be delivered over the next 4-5 years. They will allow us to improve how we operate as an organisation and support our staff to work more flexibly. Our flagship programme, [encompass](#), is our largest and most significant digital investment and will provide a single digital care record for every citizen, accessible by all care providers with a legitimate reason for access, changing the way in which we deliver health and care services across the region to achieve better population outcomes as well as opening up new avenues for innovation in the years to come.



Our key programmes and supporting initiatives for the delivery of our digital vision

We have established a number of commitments to our partners to ensure that the tools and systems we implement are fit-for-purpose and meet their needs and our shared objectives. We will :

- Open new routes and forums for our population to co-design services and tools with us; working proactively to better understand their experiences and digital requirements;
- Embed our people in the design and delivery processes to place their experience and insights at the heart of the digital experience;
- Provide increased opportunities for secure data and information sharing, access to integrated systems and opportunities for collaboration with arms-length bodies, universities and the private sector, in line with legislation/best practice.
- Foster partnerships that make Northern Ireland a leading location of research and innovation.

The encompass flagship programme has much to add to the innovation agenda. It will expedite development and integration of new workflows, enable the use of the App Orchard as well as the integration of medical devices, apps and other consumer technologies. The provision of a 'sandbox' environment will facilitate the use of data for R&D, planning and service improvement initiatives. The encompass team and our people recognise its position to catalyse digital transformation and spearhead innovation.







# The Digital Innovation Hub

How we plan to deliver our strategy

# Our Digital Innovation Hub

**The Digital Innovation Hub will put in place a structure around the end-to-end development cycle of opportunities and initiatives all the way through to pilot and scale stages. We have simplified this into the three stages of the Innovation Pathway centred around opportunity identification, testing and scaling.**

The high level innovation pathway will act as an anchor for all the activities that the hub will perform. This simplified model allows us to understand the key capabilities and functions that we will need to develop to successfully embed digital innovation. The three stages on the innovation pathway represent the key steps required to define, develop and deliver the core interventions and specialist capabilities that the full operating model of the hub will require.

## HSC Innovation Pathway Stages

**Build Foundations & Identify Opportunities**

**Incubate, Test & Accelerate**

**Scale, Deploy & Learn**



### **Build Foundations & Identify Opportunities**

- Determine priorities for digital innovation and set out prioritisation criteria
- Engage actors in the ecosystem to identify and collate examples of best practice and pain points. Establish a repository of best practice and identify potential use cases
- Identify target areas for innovation that will deliver greatest return on investment



### **Incubate, Test & Accelerate**

- Shortlisted ideas/examples should be developed and further enriched as formal use cases
- The pipeline should be prioritised according to a formal cost-impact analysis
- Funding opportunities should be identified
- A small number of these initiatives should then progress to the proof-of-concept and piloting stage

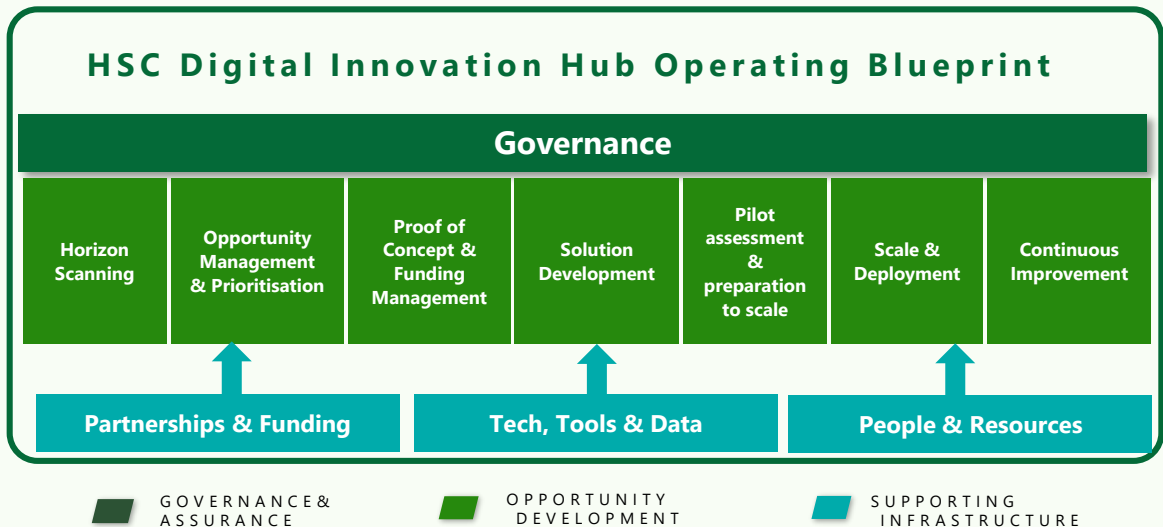


### **Scale, Deploy & Learn**

- Following pilot, decide whether to reject as unviable, develop further or proceed with the initiative
- Establish a plan of execution, set scope, milestones, and commit resources as you prepare to scale
- Using agile methodology where appropriate, facilitate further solution development, including identifying particular requirements around capabilities, digital maturity and culture

# Digital Innovation Hub Design

In order to deliver on our desired innovation outcomes and capabilities, the Digital Innovation Hub will be designed around key functional layers that will each contain the sub-functions, processes and activities that will help deliver digital innovation.



The first layer will focus on **governance, assurance and decision-making**. The second layer will focus on **the Innovation Pathway**. These layers will be supported by the required **infrastructure** such as people, technology and partnerships.

## Governance

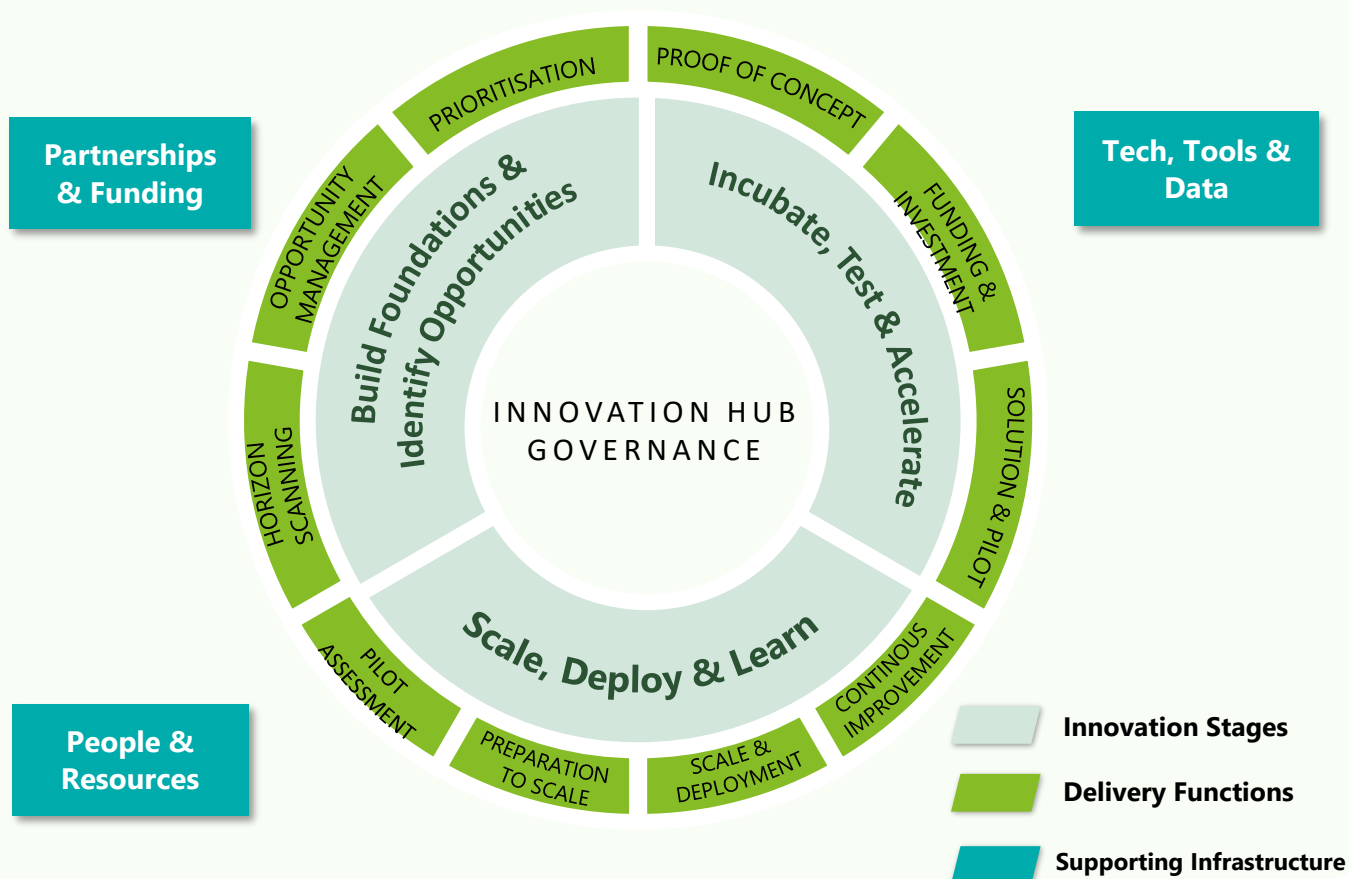
We will maintain operationally relevant governance and decision-making processes, set key priorities and evaluate innovation projects, as well as keep up to date with national and regional policy mandates and provide oversight for contractual, legal and risk related obligations.

The hub will be integral to the DHCNI governance model including Digital Innovation Steering Group, the Design Group, Portfolio Board, Enterprise Architecture Board and Strategic Information Board. It would also maintain a line of sight to the wider HSC, DoH and other government-led transformation agenda e.g. Dept of Economy 10X strategy.

A **digital eco-system collaboration plan** that will outline the key priority areas identified and agreed, the type of collaboration/working relationships and funding instruments that can be used to support these kinds of collaborative initiatives. An exercise will be undertaken to explore, develop and utilise different collaboration approaches (e.g. MoUs, partnership agreements) to ensure the necessary assurance, governance, and structure is in place for promoting and managing more sustainable and mutually beneficial long term relationships with partners.

# Innovation Pathway

In order to ensure the operation of the Digital Innovation Hub it will function around three stages of the innovation pathway.



The first step in the pathway will focus on **identifying opportunities**. We will engage with actors across the digital health ecosystem to identify and collate examples of and opportunities for innovation. We will prioritise these initiatives in line with our target areas for innovation that will deliver greatest return on investment and ensure strategic alignment as part of the assessment and prioritisation criteria.

We will then focus on **incubating, testing and accelerating** opportunities in our innovation pipeline. Prioritised opportunities will be developed with funding opportunities confirmed to move to the next stage. The initiative will then progress to the proof of concept and piloting stage. While some initiatives will progress to pilots, others will need approval for further development through the agreed governance processes.

The last steps in the innovation pathway will focus on **scaling, deploying, and learning**. Establishing a plan of execution, setting scope and milestones, bringing partners on board, and committing resources to meet the agreed scaling expectations will be key.

On an on-going basis, learning from the operation of the Pathway will be fed back into the Digital Innovation Hub to inform and enable continuous improvement.

# Our Delivery Functions 1/2

The Digital Innovation Hub will through its functions deliver the innovation pathway, from identifying digital innovation, utilising best practice to scale and spread across the ecosystem.



## Horizon Scanning

There are many recognised organisations operating in the digital health innovation space, alongside new and established sources of innovation funding to which HSC should have a coherent approach.

## Innovation Clusters

We will leverage on established networks, expertise and thematic areas to help us identify and prioritise opportunities. Cross sectoral health and innovation clusters or “community of practices” will horizon scan, share knowledge, keep abreast with latest developments on policies, economic value and planning arrangements in the respective thematic areas

### THEMATIC CLUSTER FOR PATIENT SAFETY EXAMPLE – SEPSIS

*Aim: To decrease sepsis mortality rates by maximising digital technology to clinical workflow*

#### WHAT

- A digital care pathway for sepsis
- Integrates clinical parameters, including patient observation data (via e-NEWS) and lab results
- Automatic alerts when detects patients at risk for sepsis and prompts further action

#### WHY

- Screening for sepsis = 100% in ED and wards
- Antibiotic administration for patients with sepsis within an hour up to 90% in ED|60% on wards – septic shock mortality in the <45s down from 60% to 7.69%

## Opportunity Management

The use of the innovation pathway will provide a clear roadmap to the different stages of innovation within health and social care providing signposting for internal and external stakeholders that has previously been missing. Each stage of the innovation pathway will correspond to a functional area that will contain the processes and activities needed to deliver the hub’s collective capabilities.

We will prioritise opportunities in line with target areas for innovation in line with DHCNI governance.

## Innovation Repository

HSC staff interested in innovation will be able to access a repository of digital innovation for examples of prototypes, pathfinders and pilots implemented and evaluated locally, regionally or internationally. We will with HSC R&D to identify areas of research with the potential for digital innovation moving primary research more quickly and efficiently into practice. In addition, the hub as well as working with HSCQI will be a mechanism to collate areas of “unmet needs”, challenges and gaps within the wider HSC system We will work with Small Business Research Initiatives (SBRI) and PALS Innovative Procurement Unit as enablers to this function.

## Prioritisation

By focusing on digital innovation activities that are aligned to wider HSC vision and strategy, we will focus our energy on outcomes and goals of transformation and policy agenda. With current resource constraints, focusing digital innovation activities on a limited number of key priority areas is a sensible approach for investment on the activities that have the best chance to have the biggest impact.

# Our Delivery Functions 2/2



## Proof of Concept & Funding Management

We will develop short-listed examples and identify applicable funding opportunities

## Innovation Fund

Another key deliverable will be setting up an innovation fund to promote a “digital first” culture – this fund could be used as direct grant or as part of matched funding to facilitate a “test of change” to support new service models. The fund will be accessible to our people and will emphasise a cross-disciplinary and collaborative approach.



## Scale & Deployment

A set of innovation wrap-arounds such as incentives, performance management, business change and technical guidance/support will be available; to encourage innovators to continue to champion and develop their offerings; and for adopters who need to manage the change to adopt a new system/service model. The knowledge and expertise of our internal and external partners will be critical in providing guidance and evaluation, for example, in setting scope, milestones and use of agile methodologies.

## Pilot Assessment & Preparation to scale

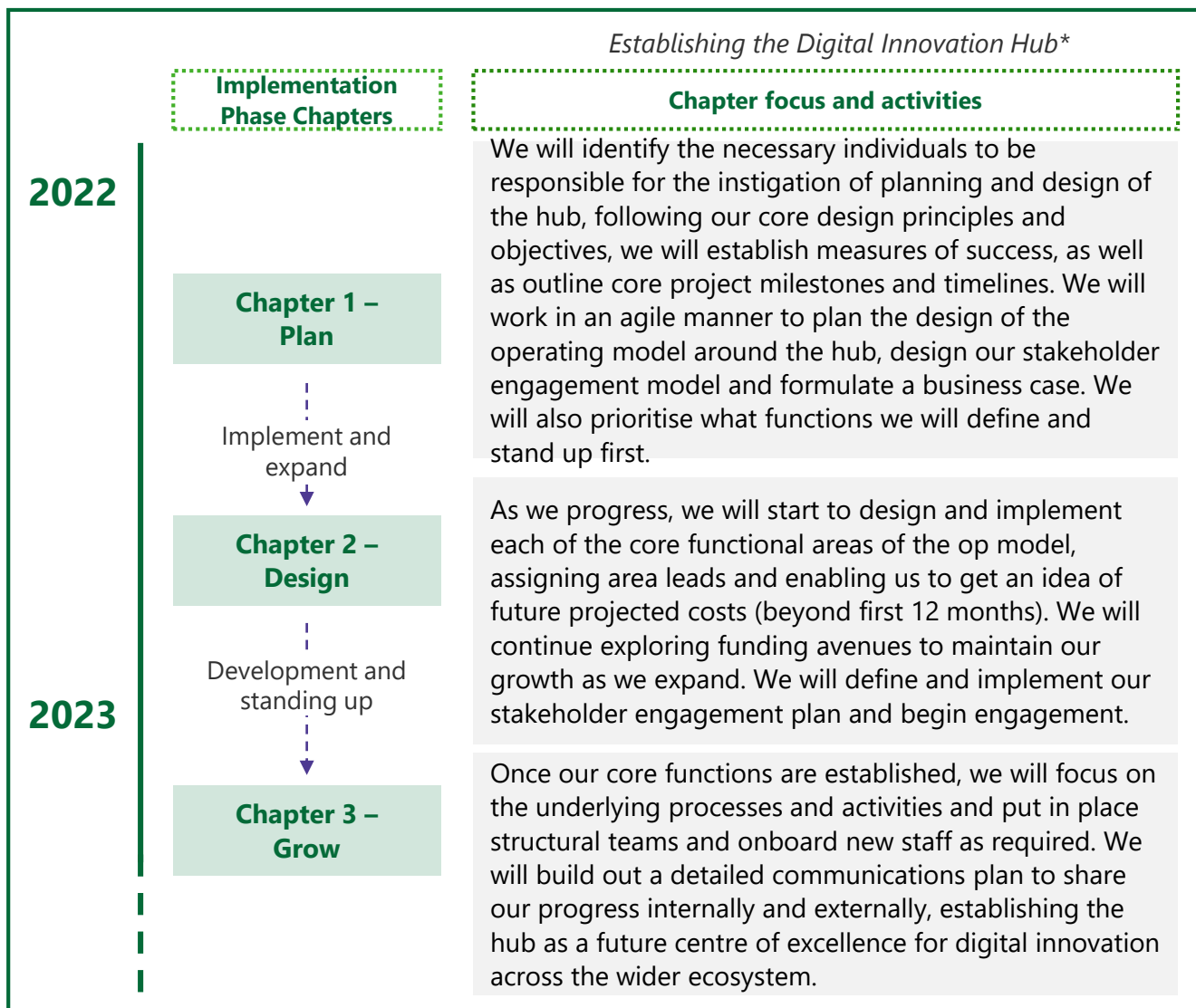
An important stage of the pathway is to ensure scale and spread of those prototypes that have delivered real outcomes and benefits. There will be mechanisms to increase visibility and regional sponsorship and endorsement of these initiatives at the highest level - key policy and decision makers ahead of time for commissioning and wider adoption. Shortlisted ideas/examples should be developed and further enriched as formal use cases. The pipeline should be prioritised according to a formal cost-impact analysis and where possible funding opportunities should be identified.

**Continuous improvement** – we will assess and learn from each cycle of innovation, sharing both successes and failures from each deployment.

# Implementing the Digital Innovation Hub

In line with the wider digital transformation occurring in parallel across the HSC ecosystem, the Digital Innovation Hub will be established via a three phased roadmap (as described on page 13). This focused implementation timeline considers the immediate next steps and actions needed to begin standing up the hub over the next 12 months.

## Implementation Roadmap



\*Note that timescales here are solely indicative and will be dependent on the future planning and funding position



# Partnerships

How we plan to work with our partners to deliver our HSC digital strategy



# Our partnership approach

## Our Ecosystem Partners

**Innovation requires an ecosystem-wide response, including multi-disciplinary skillsets, fusion teams and internal and external insights and ideas.** Establishing strong, ongoing partnerships with internal and external groups will provide mutual benefits and as such we will outline a number of commitments that we will make to our partners, as well as our expectations of them to support our digital innovation agenda.



### Our Population

**Summary:** The people that use our services are central to everything that we do in HSC. Co-production with our population will be central to the Digital Innovation Hub's activities and will inform the innovations we identify and support. (see Appendix B for practice example)



### Our People

**Summary:** Our people are central to services we deliver and are often at the forefront of innovative ways of working. The Digital Innovation Hub will offer practical advice, connections and support or the development of new ideas and guide staff in the use of the innovation pathway to improve the care they deliver.



### Academia

**Summary:** Academic Institutions are a vital research and innovation partner. They provide us with the latest knowledge and evidence and assist us to understand what's ahead in terms of the digital forefront.



### Research & Development

**Summary:** R&D is a key element in the successful delivery of the innovation strategy and the Digital Innovation Hub. We will rely on them to provide input to horizon scanning, prioritisation and evaluation.



### Digital Suppliers

**Summary:** We will rely on suppliers to support us in delivering strategic innovation programmes, bringing their industry expertise to complement that of our health and care teams. We will ensure we have an effective supplier management approach to support this.



### Innovation Partners

**Summary:** We will work with alliances of local government, councils, innovation networks at local, national and international level, corporations/SMEs and industry experts to cultivate connections and strategic opportunities for collaboration, co-creation and investment in this sector.



### Funding Partners

**Summary:** Attract funding resources, sponsorship and partnerships with which to develop the processes and structures needed. Position HSC as an important contributor to the wider innovation and digital economy for Northern Ireland e.g. 10X Strategy



# Innovation Enablers

What we need to help us deliver our digital strategy

# Our Innovation enablers

Embedding innovation successfully relies on many things, from culture and governance through to having the right infrastructure, partnerships and funding channels. Establishing these foundational ecosystem enablers is a critical component of the implementation process and will enable us to deliver on our stated vision and mission for digital innovation .

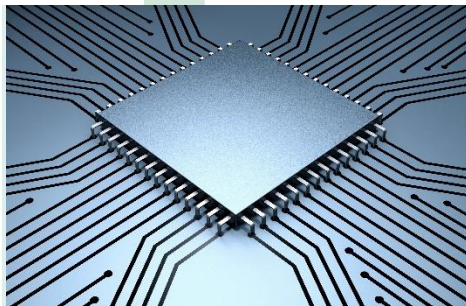
## Our Innovation enabler categories



**People & Culture**



**Funding**



**Governance & Decision-making**



**Data & Technology**

# Innovation Culture

**We will develop a culture that brings digital innovation to the forefront of what we deliver, from our leadership through to our front-line clinicians and staff. Our vision for an innovation led culture starts with providing access to data, being able to scale innovative ideas through a transparent process and governance that feeds back into our digital portfolio and the ability to access external funding sources to champion our innovation ideas.**



## What will our innovation culture look like?

*We will involve people across HSC in understanding the value, processes and tools around digital innovation through the Digital Innovation Hub*

*Our people will invest time in understanding digital innovation and their role in bringing ideas and sharing best practice*

*We will consult with our people and our population to understand their priorities around digital innovation.*

*We will work with our partners, policy makers, academia and third sector to bring in cross industry expertise around digital innovation.*

## Our Commitments

*Through the creation of the Digital Innovation Hub, we will streamline the understanding and process for digital innovation across HSC.*

*We will foster an innovation culture that is agile and adapting to lessons learned to prevent the same issues reoccurring and taking on board learning from other sectors through our partners.*

*We will involve our people and our population in championing the value of digital innovation as well as understanding their needs and priorities.*

*We will be transparent about how the Digital Innovation Hub operates, create a single point of contact and reduce bureaucracy in getting involved.*

*We will foster education and learning opportunities around digital innovation to empower our colleagues to bring forward and champion examples of innovation.*

*We will develop a Digital Eco-system Stakeholder engagement plan that includes mapping stakeholders into different innovation clusters each with a unique plan of engagement at a local, regional and international level.*

# Innovation Funding

**Our aim around digital innovation funding will be to identify multiple sources for innovation funding, including through research grants, academia or partnerships with the private sector. We will leverage our assets to attract investment and build a roadmap for how we will engage with industry and partners to do so.**



## What will our innovation funding priorities look like?

*We will develop a roadmap for how we will engage with industry and partners to seek sources of funding internally and externally.*

*We will explore internal funding opportunities and ring-fencing budgets for innovation.*

*We will build a capability to develop business cases to support funding applications as part of the Digital Innovation Hub.*

*We will explore creative funding opportunities, including co-financing to support value based care.*

## Our Commitments

*We will seek opportunities to access existing funding opportunities within the digital portfolio (e.g. small projects) and consider ring-fencing funding in each hospital/Trust/Regional for innovation.*

*We will create a capability and secure resources to help with funding bid management and the submission process.*

*We will seek to establish a permanent recurring fund for the Digital Innovation Hub for the next 4 years by putting together a business case.*

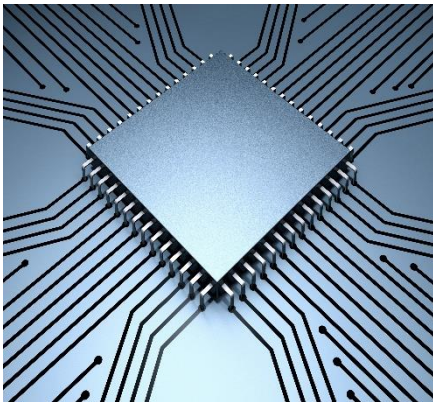
*We will consider existing innovation funding grants to identify potential funding or collaboration opportunities.*

*Our stakeholder engagement mapping should be aligned with the funding roadmap to identify short and long-term opportunities for attracting monetary and non-monetary support.*

*We will commit to transparency and regular reporting/status updates regarding the funding and grants pipeline and build this into the Digital Innovation Hub functions and processes.*

# Innovation Governance

In our workshops with both internal and external stakeholders, governance was identified as one of the key blockers to digital innovation due to a lack of a transparent, streamlined process around data governance, information governance and wider understanding of how to engage with innovation initiatives. We would like to change this to make governance serve as an enabler to digital innovation by bringing clarity, transparency and a joined up approach to decision-making. By designing the Digital Innovation Hub to have clear governance processes, some of these challenges will be alleviated.



## What will our governance priorities look like?

*Establish a streamlined and transparent governance structure around the operation of the Digital Innovation Hub.*

*We will conduct a detailed mapping exercise for all stages of the innovation pathway, including the scale and spread stage.*

*There is a clear governance process around the innovation pipeline and how it feeds in with wider Portfolio governance.*

*We involve a network of partners and stakeholders to champion our digital innovation and access funding opportunities.*

## Our Commitments

*We will develop a detailed functional and operational design for the Digital Innovation Hub, including mapping out how the hub will be integral to the DHCNI a governance structure*

*We will consider stages of governance around the innovation pathway, including for the scale and spread stage where we lack a joined up approach across trusts, departments, etc.*

*We will review enabling governance processes around data, engagement with our population, and post pilot stages of innovation.*

*Our three key principles of governance will be: open, transparent and inclusive.*

*Routes around procurement processes and governance need to reviewed (including the SBRI framework which was currently highlighted by many as being significantly hampered by lack of governance around stakeholder participation and engagement).*

# Data & Tech for Innovation

**Data and technology are enablers for digital innovation, but there are aspects of current data governance, procurement and technology accessibility that hamper our ability to innovate. We will encourage a culture that is compliant and facilitative when it comes to data and technology. We must draw on our learning to date to pave the way for the future of digital innovation at HSC.**



## What will be the role of data and technology?

*We will learn from current challenges and blockers to enable solutions around information governance and technology.*

*We will align stakeholders early on when it comes to piloting and scaling innovation to build support and momentum.*

*We will drive standardisation of current processes and ways of working to increase clarity and transparency.*

*Sharing best practice and learning from other sectors will be a key principle of how we operate.*

## Our Commitments

*We will conduct a lessons learned exercise to identify common pain points around technology and data and brainstorm solutions for how we can move forward.*

*Our people will require more specific information governance (IG) training to understand data protection, writing data access agreements and information governance. We will create data champions at all levels.*

*We will improve access to the right skillsets when it comes to data, including data analysis and processing and feed this expertise into the Digital Innovation Hub and out into the ecosystem.*

# Appendices



# Glossary of terms

Term	Description
<b>ALBs</b>	Arms Length Bodies: key partners in our delivery of quality care, and an important source of expertise and insight in our digital transformation
<b>DHCNI</b>	Digital Health & Care Northern Ireland
<b>DoH</b>	Department of Health
<b>DWP</b>	Digital Workplace Programme
<b>ED</b>	Emergency Department
<b>EQUIP</b>	The output of this programme will “equip” HSC staff to do their job effectively
<b>HSC R&amp;D</b>	Health & Social Care Research & Development
<b>HSC QI</b>	Health & Social Care Quality Improvement
<b>ICPs</b>	Integrated Care Partnerships (ICPs) are collaborative networks of service providers. They include healthcare professionals, such as doctors, nurses, pharmacists, social workers, and hospital specialists; the voluntary and community sectors; local council representatives; and service users and carers.
<b>MoUs</b>	Memorandum of Understanding is used to formalise arrangements between 2 or more parties in order to clarify the activities and benefits for all involved. Although not legally binding, partnerships that enter into a formal agreement tend to be better formed and more sustainable. One way of doing this is through agreeing a memorandum of understanding (MOU) to ensure that the promised outcomes of the partnership are fully delivered and can be evaluated.
<b>NIPACS</b>	NI Picture Archiving Central System
<b>NIPIMS</b>	NI Pathology Information Management System
<b>SBRI</b>	SBRI Framework is the Small Business Research Initiative, enables the public sector to tap into new ideas and technologies and speeds up their adoption. It helps government departments connect with innovative businesses to solve the tough challenges facing the public sector.
<b>SMEs</b>	Small & Medium Enterprises
<b>TEC</b>	Technology Enabled Care