



Collaborating for Digital Health and Care in Europe

eHealth Governance - Country Report: Scotland



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eHealth Governance - Country Report Scotland

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DISCLAIMER

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1 Introduction

1.1 Scope of the document

This report is one of the 6 reports on the eHealth Governance commissioned by EY Baltic to EHTEL in the context of a contract¹ aiming at proposing a new “Health ICT Governance Framework” to the Ministry of Social Affairs of Estonia (MoSA).

With these reports, EY and MoSA have access to a sample of international good practices on how to govern the deployment of digital health within a country or a region.

	Health system	Governance	EHR architecture
Belgium	Bismarck	Bottom-up/ Top-down	Decentralised
Catalonia	Centrally Managed	Top-down	Centralised
Denmark	Centrally Managed	Top-down	Decentralised
Israel	Bismarck	Bottom-up	Decentralised
Scotland	Centrally Managed	Top-down	Centralised
The Netherlands	Bismarck	Bottom-up	Decentralised

Figure 1: Profile of the countries and regions retained for their good practice in eHealth Governance

These reports have been prepared by EHTEL experts who either have an inside knowledge of the country or region subject to the report or worked in close collaboration with experts having such a knowledge.

They describe, for each country or region,

- The context, i.e. the health and care system and its enabling eHealth system, with its technical building blocks
- The organisation in place for involving stakeholder and
- The main governance processes

A short historical retrospective and a short analysis of successes and what could be done better helps to put these good practices in perspective.

This international experience is intended to be used as input for Deliverable 3 “To-Be model for eHealth system governance” defined in the above-mentioned contract.

This document was produced with the financial assistance of the European Union via the Technical Support Instrument. The views expressed herein can in no way be taken to reflect the official opinion of the European Union.

1.2 Methodology

The methodology for the developing these reports has been designed in two steps:

- Distinguishing IT governance from IT management
- Defining what should be included under the term eHealth governance framework.

¹ Contract reference: REFORM/SC2021/003, signed on 10.02.2021 between European Commission and EY.

The line between IT governance and management has been drawn as follows:

- The governance function is responsible for determining strategic direction.
- The management function takes that strategic direction and translates it into actions to achieving the strategic goals.

To define what needs to be covered under the term eHealth Governance, a few models have been looked at and COBIT 5 has been retained as a relevant one to support health and care in systems in their digital transformation journey².

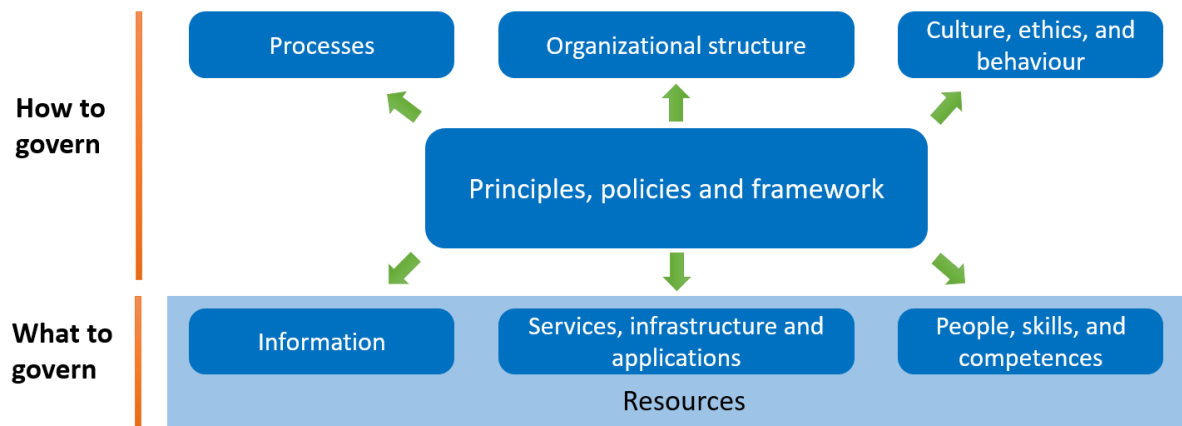


Figure 2: Governance Framework [MARCELO 2018]

2 Report on Scotland

2.1 Health and care System description

The National Health Service in Scotland is a Beveridgian system that serves a population of 5.46 million. A Beveridgian system, by definition, provides health care for all its citizens through income tax payments. Under this system, the government owns the majority of hospitals and clinics. The majority of healthcare staff are employed by NHS Scotland. But there are also private institutions, clinicians and healthcare professionals that are independent contractors and collect their fees from the government.

² See “Transforming Health Systems Through Good Digital Health Governance”, Alvin Marcelo, Donna Medeiros, Kirthi Ramesh, Susann Roth, and Pamela Wyatt (2018)

Health is a devolved matter in Scotland (since 1999), and the governance of the National Health Service in Scotland rests with the Scottish Government. The Scottish Parliament enacts legislation about the Scottish NHS. The Cabinet Secretary for Health and Social Care has ministerial responsibility in the Scottish Cabinet for the NHS in Scotland. Approximately 160,000 people work for NHS Scotland (at all levels).

There are fourteen territorial or regional Health Boards in Scotland. The Health Boards in Scotland are responsible for planning, commissioning and delivering frontline NHS services in their area. They plan and commission hospital services and community health services including services provided by GPs, dentists, community pharmacists and opticians, all of whom are independent contractors.

There are more than 900 General Practices in Scotland. In Scotland, citizens are required to register with a local Scottish General Practitioner (GP). People who require advice outside of GP opening times or have a medical query that is non-urgent - can contact NHS 24 by telephone on 111. NHS 24 is a national service that provides 24-hour advice and can direct callers to relevant health services.

The majority of health care provision in Scotland is provided by the public sector (NHS Scotland) and is paid for through taxation, as in most Beveridgian systems.

There are seven Special Health Boards and one public health body, Public Health Scotland, which is Scotland's lead national agency for improving and protecting the health and wellbeing of all of Scotland's people.

The role of the Special Health Boards is to provide improvement support, analysis, and logistics across the entirety of the National Health Service. The Special NHS Boards are as follows:

- Healthcare Improvement Scotland
- NHS Education for Scotland
- NHS National Waiting Times Centre
- NHS24 – Providing telephone and web-based health advice and information.
- Scottish Ambulance Service
- The State Hospitals - providing assessment and care in conditions of special security for individuals with a mental disorder.
- NHS National Services Scotland - supplying services including health protection, blood transfusion and information.

The following is an organizational diagram of Scottish Government including the National Health Service

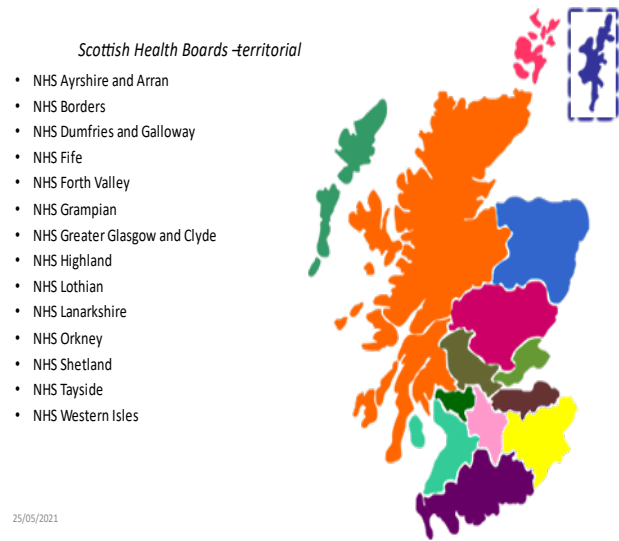


Figure 3: Fourteen Territorial or regional Health Boards

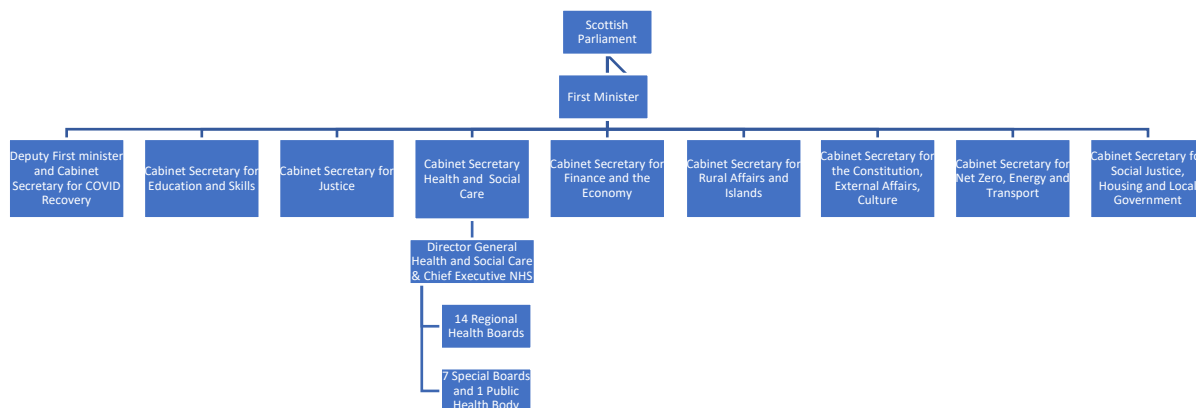


Figure 4: organizational diagram of Scottish Government

The Cabinet Secretary for Health and Social Care is responsible for:

- NHS performance
- Health care and social care integration
- Patient services
- Primary care, acute services elective centres
- Implementing the national clinical strategy, Quality Strategy and Service planning
- Allied Healthcare services
- Carers, adult care and support
- Child and maternal health
- Dentistry
- Medical records, health improvement and protection

Scotland Health and Care System Reform

Following a number of years reviewing and debating the possibilities for health and care integration, Scotland instituted legislative reform in its healthcare system in 2014 – integrating health and social care both at the government level and at the health board level. The (2014) Act required local authorities and health boards to jointly prepare an integration scheme. Each integration scheme sets out the key arrangements for how services are planned, delivered, and monitored within their local area. The arrangements for integration had to be in place by 2016.

They could take this forward in two ways:

- The Health Board and Local Authority delegate functions between each other - this is the lead agency arrangement.

or

- The Health Board and Local Authority delegate to a third body called the Integration Joint Board (IJB) - this is the body corporate model.

In total 31 health and social care partnerships have been set up across Scotland and they manage almost £9 billion of health and social care resources. 30 adopted the body corporate or IJB model and 1 area adopted the Lead Agency model. The IJB membership includes appropriate health, local authority and third sector representatives. Each IJB receives delegated funds from the health board and local authority (there is no separate direct funding from the Scottish Government).

The key elements of Adult Health and Care Integration in Scotland are the following:

- IJBs are required to produce a Strategic Plan to deliver on the nationally agreed Health and Wellbeing Outcomes.³
- The IJB commissions (or directs) the Council and Health Board to deliver services in line with the Strategic Plan. The funding is then allocated from the (single) budget for health and care
- Chief Officers appointed by the IJB will lead implementation. This post is accountable to the Chief Executives of the Health Board and Local Authority.
- Operational integration of services.

A performance report detailing progress towards the delivery of the Health and Wellbeing Outcomes in the local area is delivered annually.

2.2 eHealth System

The Scottish Government and NHS Scotland have had a national eHealth (referred to as digital health and care) Strategy in place for many years to support key health policy aims such as improving the quality of care, enabling shared decision-making with patients, and integrating health and social care. eHealth plays a pivotal role in evolving the way in which care is delivered in Scotland, empowering both citizens and professionals through better digital services and information.

From the early 2000s onwards, the implementation of Health IT in Scotland has been grounded in supportive health policy and strategy frameworks. The strategic approach has placed technology at the heart of the quality agenda and provided waves of financial support for IT developments that drive service modernisation and (more recently) the integration of health and care.

Subsequent Scottish eHealth / digital health and care strategies have evidenced a gradual shift away from health IT objectives that focus only on health organisations, towards support for strong citizen engagement and multi-stakeholder leadership to deliver digital solutions and technology enabled care services.

Additional investment (and leadership) was provided by the Scottish Government for the use of proven technologies in health and home settings. Technology has been explicitly regarded as a tool to support formal health and social care integration.

2.2.1 National/Regional building blocks (infrastructure and services)

2.2.1.1 *Electronic medical records - Primary Care*

The evolution of electronic medical records in Scotland began with the General Practitioners. General Medical Practice patient administration and clinical systems are delivered as a managed service. In the early days of General Practice IT systems, the General Practice Administration System for Scotland (GPASS), was a publicly owned electronic health record for primary care (developed from 1984 onwards). It was replaced from 2008 onwards by the two GP IT systems, Emis and Vision which are still used by Scottish GPs.

³ <https://www.gov.scot/publications/national-health-wellbeing-outcomes-framework/https://www.gov.scot/publications/national-health-wellbeing-outcomes-framework/>

There is work underway to move to cloud hosted services which will give the GPs the two existing and one new option. The decision about which system to select is made by GPs regionally and the contract is national. The procurement process is managed by NHS National Services Scotland (another of the Special Health Boards).

Hospital EMRs

TrakCare® by InterSystems, is the Patient Management System in many Scottish hospitals. Hospitals in 13 regional Health Boards use TrakCare, covering over 70% of the population.

Typically, TrackCare functionality is determined by individual NHS Boards. It includes all patient information from Outpatient, Inpatient and Emergency. TrakCare includes electronic requesting (Order Comms) for Pharmacy, Labs, Radiology and Cardiology. Functionality ranges from predominantly administrative to fully fledged EPR usage with integration into clinical pathways.

A consortium of five Health Boards - NHS Ayrshire & Arran, NHS Borders, NHS Grampian, NHS Greater Glasgow and Clyde, and NHS Lanarkshire - however make up a team of more than 160 users to agree on requirements and select the patient management system.

PACS national repository

PACS (Picture Archiving and Communications System) is a national repository of clinical images and radiological reports. When a patient is referred to radiology, the resulting image is stored on the PACS system. This is accessed by a Consultant Radiologist or Reporting Radiographer who will complete a diagnostic report. The report goes back to the referring health professional. GPs, who refer a patient for an x-ray, will receive the report on the x-ray and not the image. In secondary care, the images are available to view in addition to the reports allowing comparison of imaging performed in different health boards for the purposes of reporting.

E-Prescriptions

While elements of computerized prescribing, both at the GP level and the hospital, exist in Scotland, this is more at the level of Computerized Physician Order Entry. Scotland does not have full digital prescribing in place.

A patient can order repeat prescriptions (for standing items) via their GP's website or have a repeat prescription for regular medication set up with their GP, which is sent to the dispensing pharmacist who uses automated text reminder to let the recipient know their medication is ready to collect.

Hospitals have a system called Hospital Electronic Prescribing and Administration (HEPMA), but it is not strictly speaking a prescription but the order to give a medicine which is then administered, in other words - Computerized Physician Order Entry. Hospital in-patients who are given a prescription on discharge will typically take it (along with a copy of the letter) to their GP. Prescribed medicine may be dispensed from the hospital pharmacy.

Currently, the use of paper prescriptions is still a necessity for three reasons: it is a legal requirement that all prescriptions must be physically signed by the prescriber; the patient declaration on the back of the prescription form should be signed when dispensed items are collected by the patient or carer; and there remains a requirement to have a mechanism to alert the pharmacist to the availability of an electronic prescription message. The barcode on

Scottish GP10⁴ prescriptions is the mechanism enabling community pharmacists to access the associated electronic message.

Going forward, the Chief Pharmaceutical Officer has commissioned NHS National Services Scotland (NSS) to take forward a number of digital priorities in response to COVID including the medicines prescribing and dispensing pathways, including the use of advanced electronic signatures in primary care and community pharmacy settings that will reduce the reliance on paper prescription forms in the future.

Telehealth and Telecare

An early step in Scotland's progress towards national connected systems and telehealth was the introduction in 2001 of NHS 24 as a National Special Health Board. NHS 24 is Scotland's national telehealth and telecare organisation. This special Health Board operates a national telephone health advice and triage service for Scottish citizens that covers the out-of-hours period. In addition to its telephone-based services, it provides web-based information resources to connect with and provide health information to citizens.

The Scottish Centre for Telehealth (SCT) was established in 2006 (by the Scottish Executive) to support NHS Boards to implement and mainstream telehealth. In April 2010, SCT was integrated with NHS 24 thus providing a national reach for its work. At this time the SCT also expanded its remit to include the national Telecare Programme, becoming the Scottish Centre for Telehealth and Telecare (SCTT) from 2011-2018. From 2019 onwards the individual work programmes initiated by SCTT have been taken forward as national initiatives by the Scottish Government's Digital Health and Care Directorate and have been integrated into the Technology Enabled Care Programme, with some elements remaining in NHS24.

Citizen access to credible health information in Scotland is provided via the NHS Inform website. NHS Inform sits under the NHS 24 umbrella of services and provides condition specific as well as rapid response information e.g., for national screening campaigns or the one-stop shop for COVID-19 information.

A National Video Conferencing Service was established to provide VC support to NHS Scotland - a one-stop-shop for the support and management of video conferencing systems and infrastructure. The national video conferencing service in Scotland is called NHS Near Me and latterly Near Me to reflect the uses beyond health, to social care and third sector organisations. As in many countries, the use of video consultation in Scotland has increased exponentially during the response to COVID-19. The approximate number of video consultations in February 2020 was 300 per week. By January 2021 the figure was about 20,000 per week.

Technology Enabled Care

The TEC Programme is a Scotland-wide programme overseen by the Scottish Government. The TEC Programme initiatives are developed in support of national priorities and the Digital Health and Care Strategy (2018). They are designed to significantly increase citizen choice and control in health, well-being and care services.

⁴ GP10 is a Scottish Prescription Form Identifier for reordering purposes (of supplies of the prescription form pads).

TEC Services include:

- Remote Health Pathways Including: remote monitoring to support self-management and early intervention
- Telecare – assistive technologies, responder alarms etc., to support people in their own homes
- Near Me: Telehealth enabling patients to attend appointments by video
- Digital Mental Health - Video enabled therapy, Internet enabled CBT, Computerised CBT, Self-help resources.

Renal Patient View patient portal and MyWay Diabetes, the patient-facing platform evolved from the Scottish national My Diabetes My Way platform (2017) are delivering tailored support and information to patients with specific conditions. There are now about 50,000 registered users of MyWay Diabetes.

2.2.2 Data sharing and access

Medical Information Exchange

The Scottish Government's Digital Health and Care Directorate works with NHS Boards to promote convergence across NHS Scotland in the use of clinical systems and how data are stored and managed.

Scottish health organisations can communicate and exchange information by means of the National Information Systems Group (known as the Scottish Care Information (SCI) Gateway. Health Board Scottish Care Information stores (SCI store) are repositories which receive data from multiple laboratory systems. In addition, NHS Scotland has in place two key systems that allow information to be shared across all points of healthcare. These are the national Picture Archiving and Communications System (PACS) and the Emergency Care Summary/Key Information Summary.

There is one SCI Store in each of the NHS Board areas. At present, all GP practices in 11 of these areas have access to SCI Stores for test results. Health Board Scottish Care Information stores (SCI store) are repositories which receive data from multiple laboratory systems. Work is underway to augment the Stores with clinical letters and GP summary data. SCI Gateway enables GPs to access SCI services on-line and can also be integrated with commercial systems.

Patient Summaries

Rolled out nationally from 2006, the Emergency Care Summary (ECS) hosts a secure summary record derived from the GPs' primary care record and automatically updated twice daily. It contains a record of an individual patient's demographic data, medicines prescribed and allergies. Every registered patient (with a General Practice) in Scotland will have an ECS, unless they have chosen to opt-out. The data is an upload from GP IT systems and only contains medicines and allergies information that is held in that system. Every person registered with a GP in Scotland is allocated a 10-digit Community Health Index (CHI) number from a centrally maintained register. The CHI number is the unique patient identifier used in all primary health care activities and hospital-based clinical information systems, throughout NHS Scotland, including the Emergency Care Summary (ECS).

The register contains data on address, postcode, GP, date of birth, region of registration and, where relevant, date of death. The ECS links the CHI register with prescribing and other information documenting known adverse reactions.

Although introduced later (2012) the Key Information Summary (KIS) can be understood as the system that encompasses the ECS and the KIS special notes. The KIS special notes was introduced providing additional information primarily for patients with long term conditions or complex healthcare needs. The KIS template in the GP system is populated in three main ways: clinical information is auto populated from the GP record for certain data fields; the option of completing 'drop down' is available for other data fields, and there is the option to complete a free text box (the special note) which is often the most valuable part of the KIS, as it contains tailored clinical information. While only updated by the GP, it can be accessed widely by GP Out of Hours services, NHS 24, the Scottish ambulance service and in secondary care. Recent work by Healthcare Improvement Scotland's iHub team has demonstrated that the number of KIS records increased from 250,000 in February 2020 to 1.7 million in December 2020, following a concerted effort with GPs in response to the COVID-19 pandemic. This increase means that at time of writing over 30% of the Scottish population now have a form of KIS.

Social Care Records

A variety of social care electronic record systems are in place. Decisions about suppliers are made at the care provider level and a range of commercial products is used. Functionality also varies. Functionality ranges from recording basic care plans, to systems integrating medical records of individuals, to those that provide portal access to relatives / family members and those that include resource management, such as daily staffing needs and carer shift planning.

There is no standard health and social care portal in use in Scotland. A majority of social work departments in Scotland are using Olm Systems product. Some providers also use system products such as SWIFT, CareFirst and Framework. Orion has been deploying a H&SC portal in the North of Scotland which covers 4 areas. GP systems are independent of social care, information shared regarding an individual is usually verbal, supported with notes.

Interagency portals exist in some areas to pull together key health and key social platform data in to one platform. Social service departments in local authorities maintain the records of individuals within their care as well any third sector organisations providing care as part of a care package. These systems are not integrated.

2.2.3 People, skills, and competences

NHS Education for Scotland, which is a national Health Board, works nationally with education delivery organisations delivering accredited undergraduate, postgraduate and CPD education and training. The remit covers healthcare education and training for the NHS, health and social care sector and other public bodies.

Nationally accessible resources hosted on their platform include:

- Remote meeting and training sessions using Microsoft Teams
- Information and training videos
- Websites and E-learning modules

2.3 eHealth system organisational structure – overview

The management of the Community Health and Social Care Directorate is provided by the Director-General Health and Social Care and the Chief Executive of NHS Scotland. The teams under the Director for Digital Health and Care are divided into 2 arms:

- 1) strategy, governed by the Digital Health and Social Care Strategic Portfolio Board

- 2) implementation planning, commissioning and facilitating delivery, governed by the Health and Social Care Management Board.

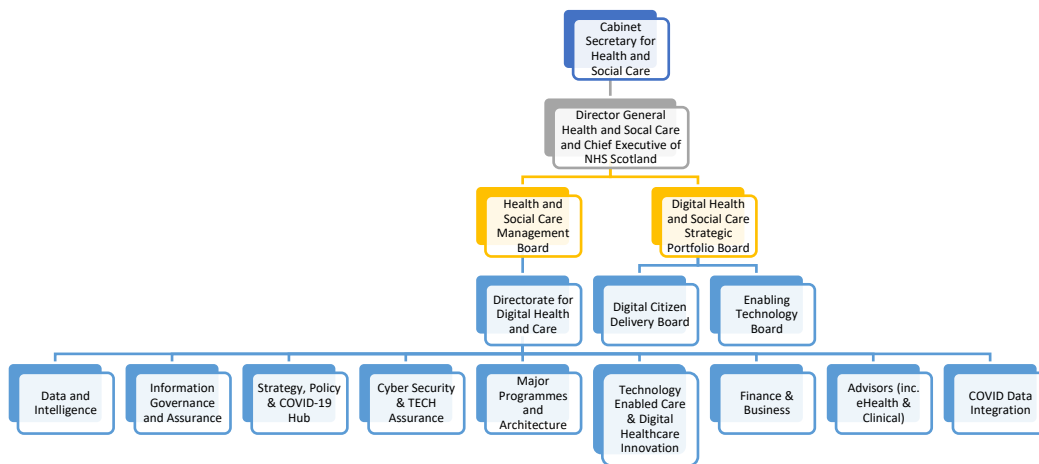


Figure 5: Organisation chart of the Health and Social Care Directorate

The actual implementation of digital health services is at the local level – Health Boards, supported by a network of IM&T Managers working at the individual hospital level. A national network of Digital Leads drawn from the Health Boards, also provide support to the managerial and clinical leaders across NHS Scotland at the local level.

A number of Digital Leads have clinical and management roles, and several are appointed to roles on the strategic groups and boards, specifically, the Strategic Portfolio Board and the Digital Citizen and Enabling and the Technology Board, providing insights to clinical priorities, the link back to policy making and strategy development. The Boards are responsible for monitoring and enforcing implementation by health and care providers.

2.3.1 Stakeholders of the national/regional layer

The overarching Governance of Digital Health and Care in the Scottish system is delivered in partnership between the Scottish Government and the Convention of Scottish Local Authorities (COSLA), which represents the 32 Local Authorities. This partnership reflects the model of Health and Social Care Integration since the implementation of the Public Bodies (Joint Working) (Scotland) Act 2014, which sets out the framework for adult health and care integration.

The Scottish Government’s Digital health and Care and Digital Directorates also work continuously in partnership with a mix of health, housing, social care, independent care, voluntary sector and industry and academic organisations.

2.3.2 Stakeholders of the health service provider layer

Legislation set out in the Patients’ Rights (Scotland) Act and the Community Empowerment (Scotland) Act state that NHS Boards, as public bodies, have a duty to involve people in the design, development and delivery of the health care services they provide for them. This includes:

- Patients / Carers and families
- Local communities Citizens

- Third sector organisations including Charities
- Higher Education and Further Education (Universities and Colleges)
- Care Providers
- Wider public health partners
- MSPs and other elected representatives.

2.3.3 Stakeholders of the innovation layer (including businesses)

Scottish Health Innovations Ltd (SHIL) works in partnership with NHS Scotland to identify, protect, develop and commercialise healthcare innovations to improve patientcare. Formed in 2002, SHIL is a private company registered in Scotland (SC236303) and limited by guarantee with three shareholders – Scottish Minister's through the Chief Scientist Office, NHS Tayside and the Golden Jubilee National Hospital.

Over the last 5 years, six Innovation Centre's directly aligned to Life Sciences, with core funding of around £100m have been established:

- Stratified Medicine Scotland Innovation Centre
- Industrial Biotechnology Innovation Centre
- Digital Health and Care Institute
- Scottish Aquaculture Innovation Centre for Sensor and Imaging Systems
- The Data Lab.
- Scottish Health Technologies Group - an advisory group set up to provide assistance to NHS Scotland Health Boards

Other bodies that promote the eHealth innovation ecosystem include:

- The Health Innovation Assessment Portal (HIAP – Scotland) - encourages prospective providers of new and/or innovative products and solutions to put them forward.
- Innovation Hubs/Clusters - Local Innovation hubs have been created within NHS Boards to support the development and implementation of innovative ideas created locally
- Scottish Enterprise works in partnership with Innovate UK and a range of public sector organisations to fund and promote a series of innovation challenges currently faced by the UK's public sector.

2.4 Approach to main governance aspects:

2.4.1 Planning and strategizing

The Scottish Government and NHS Scotland have had a national eHealth Strategy in place for many years to support key health policy aims such as improving the quality of care, enabling shared decision-making with patients, and integrating health and social care.

In April 2018, a new, integrated, Digital Health and Care Strategy was developed in collaboration with a range of partners including an independent Expert Panel made up of internationally renowned experts. The panel addressed four meta-themes:

- Infrastructure (citizen engagement and technology enabled health and care)
- People and workforce (leadership and workforce)
- Governance (digital maturity, standards and interoperability, resources and information governance)
- Research and innovation.

This Strategy built upon previous achievements (reported in programme specific annual reports) and set out the key priority areas for development:

1. National direction – establishing a joint decision-making entity, the Digital Health and Care Strategy Portfolio Board from national and local government and the NHS, supported and advised by industry, academia and the third sector to achieve greater consistency, clarity and accountability.
2. Information governance, assurance and cyber security
3. Service transformation
4. Workforce capability
5. National digital platform
6. Transition process

The Scottish Government is responsible for financing the implementation activities associated with the Digital Health and Care strategy. The key work programmes of the 2018 strategy are still active and a refresh of the strategy – due to be published later in 2021, which will incorporate learning from the past 18 months, is underway.

The Strategic Portfolio Board oversees the delivery of the Digital Health and Care strategy, makes national decisions on strategic priorities, and agrees upon the strategic financial plans for implementation.

2.4.2 Financing of eHealth investments

At the individual Health Board level Information Management & Technology, IM&T Leads work with service managers and clinicians to implement and deliver local and national digital health objectives. The Boards have their own local governance arrangements for managing their eHealth budgets.

One of Scotland's 7 Special Health Boards (Boards which have the remit to support health care delivery nationally), NHS National Services Scotland (NHS NSS) includes NSS Digital & Security which supports the national digital health agenda via the management and delivery of IM&T services focused on national & local infrastructure, business and clinical capabilities. NHS NSS holds the budget for the SCI Gateway and PACS systems. The Scottish Government's Digital Health and Care Directorate holds the budget for the TEC Programme.

2.4.3 Defining and enforcing an interoperability framework

Scottish health organisations communicate and exchange information by means of the National Information Systems Group (the Scottish Care Information (SCI) Gateway).

All of the units under the Directorate for Digital Health and Care work closely with the Health Boards and support interoperability.

2.4.4 Developing, maintaining and operating eHealth building blocks

The Digital Health and Care Directorate develops the national strategic policy, provides information and governance oversight and oversees the delivery of operational work programmes to improve digitally enabled health and care services.

At the individual Health Board level Information Management & Technology, IM&T Leads work with service managers and clinicians to implement and deliver local and national digital health objectives.

One of the Special Health Boards (which have the remit to support delivery nationally) NHS National Services Scotland, includes NSS Digital & Security which supports the national digital health agenda via the management and delivery of IM&T services focused on national & local infrastructure, business and clinical capabilities.

As already indicated, a network of Digital Leads drawn from the Health Boards provide support to the managerial and clinical leaders across NHS Scotland at the local level.

2.4.5 Monitoring and evaluating eHealth service delivery

There is not one specific body responsible for monitoring and evaluating eHealth delivery. However, there are a number of organisations and teams at the Health Board level that are responsible for monitoring and /or evaluation of existing eHealth deliver and new digitally enabled services.

The Technology Enabled Care and digital health and care programmes, which are funded by the Scottish Government, are subject to regular monitoring and reporting mechanisms. Healthcare Improvement Scotland, a Health Board with a national remit, provides support on the use of Improvement methodologies.

2.4.6 Stimulating innovation in eHealth

Scotland's history of healthcare innovation, as well as its expertise and research and development excellence, have earned it the status of leading global partner in integrated healthcare solutions. The community of digital health companies are experts in turning health data into clinical insights. Scotland's solutions are tested in its own National Health Service (NHS), which is a key contributor to the success in the sector.

Scotland has a diverse community of companies. There are more than 200 medical technology companies, with 60 companies focusing on imaging and diagnostics alone. There are approximately 230 companies involved in precision medicine related activity. Scotland also has a rapidly growing and innovative digital technology company base, with over 9000 businesses operating in this space. Their capabilities include IT consultancy, software services, cybersecurity, data, AI, fintech, networks and connectivity.

Scottish digital health companies have access to extensive data sets across clinical pathways such as diabetes, cardiovascular disease and genomics. Some examples of successful Scottish digital health and care companies include:

- *Spiritus*⁵ - a pioneering digital service for healthcare, clinical labs and life sciences. They provide industry leaders with assurance that safety, security and compliance measures have been taken across the operating life of their assets and facilities.

⁵ <https://www.spirituspartners.com/>

- *Care Sourcer*⁶ - an online platform that connects people with local care providers for the elderly. After requesting care on the website, quotes are provided from nearby services within 48 hours.
- *MindMate*⁷ - a mobile-first patient research platform providing multi-dimensional patient profiles. These are based on medical and behavioural data through gamification and machine learning, to quickly place high-quality (pre-screened) users in open clinical trials. Targeted at those aged 60 and over, it's the number one health app in 17 countries with around 1 million users. The company works with several biotech and pharmaceutical companies worldwide (UK, Australia).

2.5 Successes and what could be done better?

Scotland has developed its eHealth system according to the following principles:

- Consistent Government support enabling conditions for scale up of digitally enabled services.
- Embedding digital solutions in policy recommendations and actions.
- Iterative developments at local and regional level followed by mainstreaming into routine service.
- Supportive leadership and commitment to work in partnership across the health and care landscape.
- Regarding technology as a tool to support formal health and social care integration.
- Setting a clear timeline, in policy terms, for the building of support and integration of digital ambitions into Scottish approaches to health and care.
- Recognition of user-centeredness, citizen empowerment and engagement for sustainable service delivery and the endorsement of the Scottish approach to Service Design.

A range of successfully adopted eHealth systems are in place, including the rollout and universal adoption of the Emergency Care Summary and the Key Information Summary which have been successes and models for others. Scotland is also well recognised internationally as a leader in telehealth and telecare. This is as a result of dedicated funding and policy support from the Scottish through programmes such as the national TEC programme and the Telecare programme.

However, delays have been evident particularly in the development of a nationally accessible digital platform that supports the delivery of integrated health and social care. With the recent (2021) review of Adult Social Care (2021) and the upcoming Digital Health and Care Strategy refresh which will take into account the lessons and successes of the past 18 months, there will be a renewed focus on outstanding programmes of work and the delivery of a truly national, person-centred system.

⁶ <https://www.caresourcer.com/>

⁷ <https://www.mindmate-app.com/>