Bwrdd Iechyd Prifysgol Hywel Dda University Health Board

PWYLLGOR ADNODDAU CYNALADWY
SUSTAINABLE RESOURCES COMMITTEE

DYDDIAD Y CYFARFOD: **DATE OF MEETING:**	29 August 2023
TEITL YR ADRODDIAD: **TITLE OF REPORT:**	Digitally Enabled Transformation Plan
CYFARWYDDWR ARWEINIOL: **LEAD DIRECTOR:**	Huw Thomas, Executive Director of Finance
SWYDDOG ADRODD: **REPORTING OFFICER:**	Anthony Tracey, Digital Director

Pwrpas yr Adroddiad (dewiswch fel yn addas) **Purpose of the Report** (select as appropriate)
Ar Gyfer Penderfyniad/For Decision

ADRODDIAD SCAA
SBAR REPORT

Sefyllfa / Situation

The purpose of this paper is to introduce the Programme Business Case (PBC) (Appendix 1). The PBC sets out the digital proposition to realise the vision articulated in the Health and Care Strategy "A Healthier Mid and West Wales: Our Future Generations Living Well" and create an integrated, patient centric, community based and social model of care.

The PBC will present an ambitious 10-year transformation programme with the use of digital as an enabler.

Cefndir / Background

Today's health and care delivery model is under increasingly unsustainable pressure, and unless we consider a more effective and efficient way to deliver more integrated, impactful, and outcome-oriented services and transform what we do, the ongoing challenges we are currently experiencing and the projected increase in demand and will further significantly impact our ability to provide safe and effective care and our financial pressures will continue to increase.

The Health and Care Strategy for Mid and West Wales 'A Healthier Mid and West Wales; Our Future Generations Living Well' published in 2019 established our vision and the required redesign of integrated health and care services to deliver future proof health care. The strategy focuses on redesigning our services for the needs of our people and communities and is enabled by the effective use of digital and data as a core capability of the strategy. The global digital and data technology advancements are developing rapidly and is starting to evidence benefits in all areas of health and care transformation resulting in fundamental changes to how health and care organisations operate and deliver value.

Digital services are a significant part of our everyday lives, improving the way we socialise, travel, shop and work, the successful transformation these sectors have undertaken with a customer centred approach has significantly improved their business models and enabled them to maintain competitiveness, improve financial sustainability and profit, whilst increasing customer loyalty and enabling customers to self-serve and take more responsibility for themselves in the process.

Learning from these sectors, patient centred transformation enabled by integrated data and digital services has enormous potential to improve how the NHS delivers its services in a new and modern way, providing faster, safer, efficient, and more convenient care.

Our Health Board approach will increase efficiency and capacity, support attraction and retention of staff and provide significant improvement through service redesign and a range of digital health tools and services. Advanced analytics will enable our executive team to use intelligent insights to deliver more efficient care for our staff and the people using our services. People will be able to seek health information and support online and choose whether they speak to a healthcare professional on the phone or in person. A wide range of NHS-approved apps will help people receive ongoing support to help them manage their health and wellbeing needs in their own home, backed up by face-to-face care when this is needed.

This programme will invest in improving NHS digital systems and in developing modern technology to provide us with data and insights to improve our decision making and deliver better outcomes. We will make sure our colleagues have the technology and data they need to do their jobs and spend more time delivering care and enable our systems to talk to each other to share vital information that supports enhanced delivery of care, promoting digital inclusion, equity, and literacy for our governance, colleagues, and patients.

The Health and Care Strategy for Mid and West Wales 'A Healthier Mid and West Wales; Our Future Generations Living Well' published in 2019, had digital enablement as a core enabler and theme through the document. With the advent of digital technology, healthcare providers around the world are beginning to explore the benefits of transformation with digital as the key enabler. Digitally enabled transformation is the integration of digital technology into all areas of a business, resulting in fundamental changes to how businesses operate and deliver value.

Asesiad / Assessment

The PBC has followed Welsh Government Infrastructure Investment guidance and is based on the five-case business model:

- Strategic Case
- Economic Case
- Financial Case
- Commercial Case
- Management Case

The summary of each 'case' is contained in an Executive Summary of the PBC, which seeks to present the main headlines of the PBC in a summarised format.

The main messages in the PBC are as follows:

Strategic Assessment and Strategic Case
The essence of the Strategic Case is to set out the case for change and need for strategic investment within digital. The key drivers for transformation are outlined below:

- There is a shortage of skilled health and social care staff
- An increase in demand for healthcare services and concurrently cost is being driven by a large and growing ageing population
- A lack of knowledge, training and system problems has resulted in a low uptake of digital solutions to-date

- There is no single, shared patient or care record
- Hywel Dda University Health Board (HDdUHB) remains largely paper based and as a result information is duplicated, kept in silos and there is a lack of real-time data
- It remains challenging to ensure service delivery across a rural geography, with services having to cover large areas, and a lack of mobile phone signal in some rural areas; and
- Inability for digital solutions to respond to changing patient and citizen needs
- System complexity with multiple transformation programmes, increasing number of pilots, a lack of evaluation and clear benefits assessment.
- Overlap and duplication of effort within the service and with local authorities and community providers providing essential care at home

The strategic case provides the alignment to 'A Healthier Mid and West Wales: Our Future Generations Living Well,' and other national digital strategies, which highlight the importance of digital transformation in the ongoing recovery and sustainability of the NHS. The introduction of modern technologies will allow the Health Board to align with key strategic aims for health and social care in Wales and provide better outcomes for patients and staff. It will also support the Health Board's plan for a new Urgent and Planned Care Hospital, which is part of the Board's journey to achieve its long-term strategy and improvement in population health.

In 2022, a programme of work was completed to help assess readiness for entire system thinking. Chief Executives and key strategic leaders participated in a resolute sixty minute one to one semi-structured interview session, which gave rise to 34 Strategic Business Imperatives.

The development of the imperatives provided the overarching strategic direction for the transformation programme to enable focus in the areas that will have the most impact. To enable improved citizen, patient and employee experience and unlock value, we have identified thirty-four strategic business imperatives, 4 core digital pillars, 4 Delivery Workstreams, and 10 Delivery Projects. These will be the key inputs to overall transformation and provide the structure and direction.

Economic Case

A range of options have been considered in the drafting of the PBC. The options include

- Option 0 - Do nothing
- Option 1 - Look to appoint additional resources into the digital team to accelerate delivery
- Option 2 - Appoint (when required) additional support from agencies to bolster the digital team
- Option 3 - Appoint a strategic digital transformation partner

Further detail can be found on page 16 of the PBC.

All options were assessed against an appraisal criterion, and then ranked accordingly. The preferred option is to enter a long-term strategic partnership (Option 3) with a supplier to enable us to plan, access and manage the capacity necessary to fully deliver the scale of our digital ambitions. The partnership will fully leverage the capacity and expertise that exists, both within the Health Board and with a strategic partner, significantly accelerating the pace of delivery of our transformation, digital response, and priorities.

Several benefits have been identified, and these benefits outline how replacing the current processes will provide improved clinical value, improved and sustainable operations and help management teams effectively manage demand with the support from improved insight and digital capabilities.

A high-level assessment of the benefits and risks has been developed with potential mitigations. However, for the Full Business Case it is anticipated that these will be evaluated with the current digital enablement group, and wider stakeholders in greater detail.

Financial Case
Based on work conducted to date, total cumulative savings ranges from £78m - £239m over the 10-year period. The range is based on impact of transformation enabled by technology and a range success and confidence factors were used to determine the High, Medium, or Low probability for delivery.

The savings have been generated from undertaking value propositions using 120 data points, and an assessment of whether transformation (if implemented) could add value to the organisation. A fully costed model can be found in Appendix D of the PBC, which outlines each of the data points, and their respective savings due to the impact of transformation underpinned by digital and data capabilities.

	Probability in Delivery		
	Low	**Medium**	**High**
Indicative Investment over the 10-year period	£76,492,183	£76,492,183	£76,492,183
Annual Savings from Year 5	£35,662,212	£26,563,285	£17,460,269
Pay Back Period	Year 1	Year 1-2	Year 2-3
Cumulative savings over the 10-year programme	£239,118,393	£158,592,891	£78,031,198
Return on Investment	213%	107%	2%

Commercial Case
The Commercial Case sets out a framework which will help us to structure our procurement strategies. The recommendation is to procure the Digital Strategic Transformation Partner via an existing framework and several suitable frameworks have been identified. These will need to be assessed against the detailed requirements by the Procurement Team once these have been established.

Following the release of the Prior Information Notice (PIN) in May 2023, 60 companies have registered an interest in working with the Health Board. A finalised specification will be completed by July 2023 ready to be released to the market.

The contract duration will be 10 years to ensure that a long-term strategic partnership will deliver enhanced value and commercial benefit to the Health Board, create inward investment in the local economy and establish new skills and job opportunities making the region and the health and care sector an attractive place to live and work.

Management Case
It is recognised that the scale of challenge and resource requirements to achieve the level of ambition in the PBC are significant. The Health Board will build upon the programme structures already in place for A Healthier Mid and West Wales Programme. However, this will need to be enhanced to manage a sizeable number of business cases in parallel whilst also maintaining and updating the PBC itself, we will seek from our strategic partner support and investment to assist with the demands.

Also included in the management case is the management of risks and required change management. The implementation of the transformation strategy is expected to have significant impact on frontline staff, and it will be important to minimise any negative impact during the implementation period. Effective communication, change management and visible leadership will be critical to the success of the programme.

Prior to implementation and commencement of work packages further analysis of current processes will be conducted to develop detailed baseline measures against which to monitor, manage and assess benefit realisation. Strong governance and programme management will oversee the transformation strategy and executive sponsors for each programme will oversee the progress of delivery. It is important to note the prioritisation of benefits are key to the level of impact and timing of delivery and which programme is being implemented at the time, it is further important to consider the synergy across the wider A Healthier Mid and West Wales programme in the region.

Argymhelliad / Recommendation

The Committee is requested to:

- **AGREE** to proceed to a Full Business Case, with the identification of a preferred supplier for a Digital Strategic Partner based on the Programme Business Case.

- **NOTE** the framework that would be established with a no obligation/£0 minimum contract, providing Hywel Dda University Health Board with maximum flexibility.

- **AGREE** each value proposition will have its own business case and will be considered on a case-by-case basis by the Board for final approval due to the financial investment required.

- **AGREE** that no commitment to a specific supplier will be made until a further review to confirm that the recommended investment decision is appropriate; before the contract is placed with a supplier or partner (or a work order placed with an existing supplier or other delivery partner).

Amcanion: (rhaid cwblhau) **Objectives: (must be completed)**	
Committee ToR Reference: Cyfeirnod Cylch Gorchwyl y Pwyllgor:	2.3 To scrutinise and provide oversight of financial and revenue consequences of capital investment planning and significant business cases (both short term and in relation to longer term sustainability). 2.5 Conduct detailed scrutiny of all aspects of financial performance, the financial implications of significant revenue (all those over £1million requiring Board approval), business cases, projects, and proposed investment decisions on behalf of the Board. 3.8 Receive reports relating to the Health Board's Digital Programme to ensure benefits realisation from the investment made.

Cyfeirnod Cofrestr Risg Datix a Sgôr Cyfredol: Datix Risk Register Reference and Score:	Not applicable
Galluogwyr Ansawdd: Enablers of Quality: Quality and Engagement Act (sharepoint.com)	6. All Apply
Parthau Ansawdd: Domains of Quality Quality and Engagement Act (sharepoint.com)	7. All apply
Amcanion Strategol y BIP: UHB Strategic Objectives:	All Strategic Objectives are applicable
Amcanion Cynllunio Planning Objectives	All Planning Objectives Apply
Amcanion Llesiant BIP: UHB Well-being Objectives: Hyperlink to HDdUHB Well-being Objectives Annual Report 2021-2022	9. All HDdUHB Well-being Objectives apply

Gwybodaeth Ychwanegol: Further Information:	
Ar sail tystiolaeth: Evidence Base:	Included within the main body of the report
Rhestr Termau: Glossary of Terms:	Included within the main body of the report
Partïon / Pwyllgorau â ymgynhorwyd ymlaen llaw y Cyfarfod Bwrdd Iechyd Prifysgol: Parties / Committees consulted prior to University Health Board:	Not applicable

Effaith: (rhaid cwblhau) Impact: (must be completed)	
Ariannol / Gwerth am Arian: Financial / Service:	The full extent of the financial investment and return has yet to be finalised, however typical positive net returns on the investment in a 2 – 4-year period. A value case assessment has been undertaken and we are validating the findings. A wider strategic benefit will be that the healthcare systems will be more efficient, processes are faster, and wasteful processes can be decreased or eliminated supporting longer term sustainability for the health board.

Ansawdd / Gofal Claf: **Quality / Patient Care:**	The implementation of the transformation and digital enablement plan, will provide the following positive impact on quality and patient care: • Patient safety increased - Increased timeliness and availability of relevant clinical information decreased transcription errors and decreases risk to patients' safety • Positive patient outcomes increased - Easy access increases speed and of diagnosis, care, treatment plan and onward referral • Patient confidence increased - The availability and targeting of accurate and relevant information at the point of contact • Reducing delay, improving waiting times and access to treatment
Gweithlu: **Workforce:**	Having a modern digital system, will attract and retain the workforce within the Health Board. A key component of this work is the assessment of operational readiness for organisational and digital change, the digital roadmap required and recommended service redesign principles for a whole system approach, which will enable the change the workforce urgently need. As part of the transformation plan there will be a change management, service redesign and digital enablement programme designed to co-produce and design services for people through a professional integrated and upskilled workforce across health and care.
Risg: **Risk:**	Without the necessary investment in transformation and digital there is a risk that the current complex system will become even slower stifling innovation that the Health Board has progressed and urgently needs. A typical monolithic technology programme which is the current approach introduces significant technical and business dependencies across the Health Board which affects patient delivery and staff morale.
Cyfreithiol: **Legal:**	Not applicable
Enw Da: **Reputational:**	The ambitious transformation and digital enablement plan will progress the Health Board forward to becoming a fully integrated digital organisation, and propelling Hywel Dda to become the first system-wide digital exemplar within NHS Wales.
Gyfrinachedd: **Privacy:**	At the centre of the transformation and digital enablement plan is inclusivity, and the requirement to ensure that staff, patients, and the people of our region are included in the development of any service with strong information governance and cyber security.
Cydraddoldeb: **Equality:**	Not applicable

GIG CYMRU NHS WALES
Bwrdd Iechyd Prifysgol
Hywel Dda
University Health Board

Transformation enabled by Digital Enablement Programme Business Case

July 2023

Contents

1. Executive Summary

1.1 Introduction

1.1.1 This Programme Business Case – the "PBC" - sets out the digital proposition to realise the vision we articulated in our Health and Care Strategy "A Healthier Mid and West Wales: Our Future Generations Living Well" and create an integrated, patient centric, community based and social model of care.

1.1.2 This document sets out the Programme Business Case (PBC) for the investment in the Digital Enablement Plan for Hywel Dda University Health Board (HDdUHB). The purpose of this business case is to articulate the strategic rationale for the programme, outline its scope and breadth, and provide an indication of the likely benefits and costs associated with delivery.

1.1.3 The COVID-19 pandemic has highlighted the crucial role of digital technology in the way we live and work and has accelerated the move to online for many more patients. At the same time, it has exposed greater inequalities, including digital exclusion, and increased the risk that those who do not have access to digital devices, fast broadband and sufficient data are left even further behind. For this reason, we have produced a new digital enablement plan to refocus our priorities and better prepare us for the future. This PBC sets out the investment required to implement this approach and the benefits it will deliver.

1.1.4 By committing to this programme business case and the digital enablement plan, the Health Board will continue to develop as a digital integrated health organisation. We will work to ensure patients, and staff, local citizens, and partners are able to thrive in the digital future and play active roles in shaping Hywel Dda into a digital exemplar where technology is used to improve the lives and life chances of everyone.

1.1.5 Following approval of this PBC, our focus will move to Full Business Case stage, where we will further develop the Economic, Financial and Commercial Cases based on results of the market testing focussed on the specification requirements outlined within the tender for a strategic partner in order for a FBC to be brought to the Board by December 2023. This date will enable us to deliver improvements to our transformation agenda as soon as possible, and progress at pace to align with establishing a programme by April 2024.

1.1.6 The document has been prepared in accordance with HM Treasury Green Book guidance for the five-case model.

1.2 Strategic Case

1.2.1 Digital technology is a significant part of our everyday lives improving the way we socialise, shop and work. It also has great potential to improve how the NHS delivers its services in a new and modern way, providing faster, safer and more convenient care. Our Health Board approach will increase the range of digital health tools and services available. People will be able to seek health information and support online and choose whether they speak to a doctor on the phone or in person. A wide range of NHS-approved apps will help people get ongoing support to help them manage their health and wellbeing needs, backed up by face-to-face care when this is needed. As part of this programme will be investing in improving NHS Digital systems and in developing new technology. We will make sure staff have the technology they

need to do their jobs, and our systems can talk to each other and share vital information to support the delivery of care, ensuring that everyone is digital included, and staff and patients are not excluded.

1.2.2 Through the Digital Enablement Plan, we will look to;

- Provide digital services and tools to give people more control over their own health and the care they receive from the NHS
- Extend to everyone the NHS Wales App as a new digital 'front door' to give people secure digital access to their own medical records; find trusted information about their health online; allow patients to conveniently book appointments and view test results online. In time it will also provide medical advice and consultations securely
- Give health and care staff the technology they need to help them complete administrative tasks more quickly, freeing up time to spend with patients
- Set standards that keep information secure and make sure systems talk to each other to provide health and care staff with complete access to joined up patient records.

1.3 Economic Case

1.3.1 The options, benefits, and risks were developed collaboratively through workshops and engagement with stakeholders from across the Health Board. These sessions considered options for the implementation of the Digital Enablement Plan.

1.3.2 The options were taken forward for further analysis.

	Option 0 **Do nothing**	**Option 1** **Look to appoint additional resources into the digital team to accelerate delivery**	**Option 2** **Appoint (when required) additional support from agencies to bolster the digital team**	**Option 3** **Appoint a strategic digital transformation partner**
Description	Do Nothing – Continue with a current transformation approach within the Health Board, which is reactive and lacks pace of delivery.	Appoint additional workforce to increase the number of projects that the digital team can rollout	Based on the specific programmes of work look to appoint agency staff to work alongside the current workforce to deliver	Procure a strategic digital partner, who will provide capacity and capability that will be able to scales up quickly to allow rapid transformation alongside the current digital team(s)

Benefits and Risks Assessment

1.3.3 In line with the value-based healthcare programme[1], this project is expected to improve the patient experience and lead to better patient outcomes. The key benefits that are expected to be realised are set out below.

[1] https://vbhc.nhs.wales/

1.3.4 An exercise was undertaken for the risks identified across six areas: change management, implementation, information governance, infrastructure, interoperability and funding. As with the identified benefits, the above risks were scored to distinguish between the shortlisted options. The objective of the scoring exercise was to assess the level of new or additional risk that each option may introduce.

Total Economic Cost

1.3.5 The full economic has been calculated for a full 10-year period for HDdUHB and is based on a number of principles and assumptions detailed within the main body of the PBC.

Table 1: Total Economic Cost

	Probability in Delivery		
	Low	**Medium**	**High**
Indicative Investment over the 10-year period	£76,492,183	£76,492,183	£76,492,183
Annual Savings from Year 5	£35,662,212	£26,563,285	£17,460,269
Pay Back Period	Year 1	Year 1-2	Year 2-3
Cumulative savings over the 10-year programme	£239,118,393	£158,592,891	£78,031,198
Return on Investment	213%	107%	2%

Option Appraisal and Preferred Option

1.3.6 The preferred option would be to enter into a long-term strategic partnership (Option 3) with a supplier to enable us to plan, access and manage the capacity necessary to fully deliver the scale of our digital ambitions. The partnership will do this by fully leveraging the capacity and expertise that exists, both within the Health Board and with a strategic partner, significantly accelerating the pace of delivery of our Digital Response and digital priorities.

1.4 Financial Case

1.4.1 A financial appraisal based on a number of assumptions outlined within the financial case.

1.4.2 The total financial cost to HDdUHB will be in the region of £75m, when allowing for costs associated with VAT, capital charges and CPI indexation.

1.4.3 Based on work carried out to date, total cumulative savings ranges from £78m - £239m over the 10-year period. The range is based on impact of the technology. In order to generate the range success and confidence factors were used to determine whether there is High, Medium or Low probability for delivery.

1.5 Commercial Case

1.5.1 For the Commercial Case a range of approaches was considered and discussed with the HDdUHB Procurement Team.

1.5.2 The recommendation is to procure the Digital Strategic Transformation Partner via an existing framework and several suitable frameworks have been identified. These will need to be assessed against the detailed requirements by the Procurement team once these have been established.

1.5.3 An indicative timeline for the procurement process of the software solutions is outlined in the table below:

Table 2: Procurement Timeline

Milestone	Estimated Timeline
Final PBC Draft Ready for submission	July 2023
PBC Governance and Approvals	July 2023
Define detailed requirements	July 2023
Select relevant framework(s)	August 2023
Mini competition via framework: Prepare and Issue ITT, Evaluate Responses	August 2023
Preferred supplier selected	October / November 2023
Governance and Approvals (incl. FBC Sign Off)	December 2023
Implementation Starts	April 2024

1.5.4 All required hardware / software will be procured as part of several work packages and is included within the costs outlined within the business case.

1.5.5 The contract duration will be 10 years to ensure that a partnership arrangement is developed.

1.6 Management Case

1.6.1 The Management Case addresses whether the preferred option is ‘achievable’. Its purpose is to set out in more detail the actions that will be required for successful delivery in accordance with good practice.

1.6.2 To realise the benefits of these solutions, HDdUHB needs strong governance and processes in place. The overall project will be managed by a Senior Responsible Owner, who will lead the programme team. Critical to the programme will be a strong commercial relationship, so the Health Board will look to introduce an intelligent client approach to suppler management with dedicated resources allocated to the commercial and benefits realisation of the programme. The local implementation team will work closely with the supplier to implement the solution incrementally across all sites.

1.6.3 The recommendation is to set up several External Scrutiny Groups, consisting of representatives from all clinical departments, to ensure the requirements of the solution meet the needs of the users. Furthermore, the rollout will be supported by

Digital Champions, clinical staff who will support their colleagues in adopting the new technologies.

1.7 Conclusion

1.7.1 To enable improved citizen, patient and employee experience and unlock value, Hywel Dda's digital enablement roadmap sets out **10 key programmes of work**, positioned across the **four delivery areas** of Citizen Experience & Engagement, Front Line Service Delivery, Data, Digital and Technology and Change and Programme Management. This has the potential to unlock c. **£17m to £35m** per annum of value. (see Appendix D)

1.7.2 The Hywel Dda UHB digital enablement roadmap, set across a period of five years, shows an initial view of programme phasing.

1.7.3 Delivering our target solution state, informed by our programme charters, will allow us to incrementally unlock benefit over the next 5 years using iterative delivery methods.

1.7.4 Supporting future change will prepare Hywel Dda UHB for the delivery and adoption of digitally-enabled citizen, patient and employee-centric solutions and the realisation of benefits.

1.7.5 Core areas of digital investment should be aligned to the following areas within the first 1-3 years:

- Health and Care CRM supporting **citizen engagement and health and care co-ordination and collaboration**
- Data, analytics and integration building the foundation of a **regional data fabric** through single view of a person and improving the flow of data between systems.
- Establishing remote monitoring, patient flow and **digital operations and co-ordination solutions** supporting different models of care delivery across Hywel Dda and reducing pressure on acute services

1.7.6 Delivering our target solution state, informed by the development of programme charters, which will allow us to incrementally unlock benefit over the next 5 years using iterative delivery methods.

1.7.7 The Board are asked to:

- **AGREE** to proceed to a Full Business Case, with the identification of a preferred supplier for a Digital Strategic Partner. The framework would be set up with a no obligation/£0 minimum contract, providing Hywel Dda with maximum flexibility.

- **AGREE** each value proposition will have its own business case and will be considered on a case-by-case basis by the Board for final approval due to the financial investment required.

- **AGREE** that **no** commitment to a specific supplier will be made until a further review to confirm that the recommended investment decision is appropriate;

before the contract is placed with a supplier or partner (or a work order placed with an existing supplier or other delivery partner)

2. Introduction

2.1 This document sets out a high-level Programme business case (PBC) for investment in the Digital Enablement Plan for Hywel Dda University Health Board (HDdUHB).

2.2 The document has been prepared in accordance with HM Treasury Green Book guidance and is structured into five main sections as set out below with further information provided in appendices:

- the **Strategic Case** considers the key strategic drivers and the case for change;
- the **Economic case** sets out the options and option short-listing process, benefits and risks, cost assumptions, and the total economic cost of the preferred option;
- the **Financial Case** sets out the financial appraisal and funding options for the preferred option;
- the **Commercial Case** provides an overview of the recommended procurement process; and
- the **Management Case** describes the governance structure, project plan, risk management arrangements and benefit realisation approach.

3. Strategic Case

3.1 Introduction

3.1.1 In this section the background to the project is set out alongside the strategic drivers and the case for change.

3.2 Background

3.2.1 In ten years' time, we expect the existing model of care to look markedly different. The NHS will offer a 'digital first' option for most, allowing for longer and richer face-to-face consultations with clinicians where patients want or need it. Primary care and outpatient services will have changed to a model of tiered escalation depending on need. Senior clinicians will be supported by digital tools, freeing trainees' time to learn. When ill, people will be increasingly cared for in their own home, with the option for their physiology to be effortlessly monitored by wearable devices. People will be helped to stay well, to recognise important symptoms early, and to manage their own health, guided by digital tools.

3.2.2 The Health and Care Strategy for Mid and West Wales 'A Healthier Mid and West Wales; Our Future Generations Living Well' published in 2019, had digital enablement as a core enabler and theme through the document. With the advent of digital technology, healthcare providers around the world are beginning to explore the benefits of transformation with digital as the key enabler. Digitally enabled transformation is the integration of digital technology into all areas of a business, resulting in fundamental changes to how businesses operate and deliver value.

3.3 Key Drivers for Transformation enabled by Digital

3.3.1 HDdUHB is facing several key challenges:

- There is a **shortage of skilled health and social care staff –** this is currently the biggest limitation;
- An **increase in demand** for healthcare services and concurrently cost is being driven by a large and growing ageing population, an increased incidence of chronic disease, and the demand for more costly, complex and advanced procedures. This has been exacerbated by COVID, which has reduced routine care appointments and increased wait times significantly, resulting in increased hospital admissions.
- There is a **lack of sustainable digital infrastructure** with networks systems in hospitals that require upgrading and a lack of equipment to access systems on some wards;
- A lack of knowledge, training and system problems has resulted in a **low uptake of digital solutions** to-date;
- There are over 180 Information and Communications Technology (ICT) systems in use across the Health Board. However, many of the **existing systems do not support patient flow** across the organisation, and some ICT systems are unsuitable as they are unsupported or lack key functionality;
- There is **no single, shared patient record**;
- HDdUHB remains largely paper based and as a result **information is duplicated, kept in silos** and there is a **lack of real-time data**;
- It remains challenging to ensure service delivery across a **rural geography**, with services having to cover large areas, and a lack of mobile phone signal in some rural areas; and
- There are significant **differences in health outcomes** between advantaged and disadvantaged groups within the Health Board;

- Inability for digital solutions to **respond to changing** patient and citizen needs;
- System complexity with multiple transformation programmes, increasing number of pilots, a lack of evaluation and clear benefits assessment.

3.4 Case for Change

3.4.1 *A Healthier Wales*

'A Healthier Wales' sets out the long-term plan for health and social care in Wales. Fundamentally, it advocates for a shift from reactive hospital-based care and treatment to proactive community-based, person-centred care focused on health, wellbeing and prevention.[2] This is aligned to the principles of prudent healthcare, which shape the work of the NHS in Wales and call for changing the model of outpatients by shifting care to the community and improving digital connectivity.[3] Digital solutions are a key enabler to the implementation and adoption of the long term plan. The digital enablement plan provides the foundation for the development of a long-term approach for Hywel Dda.

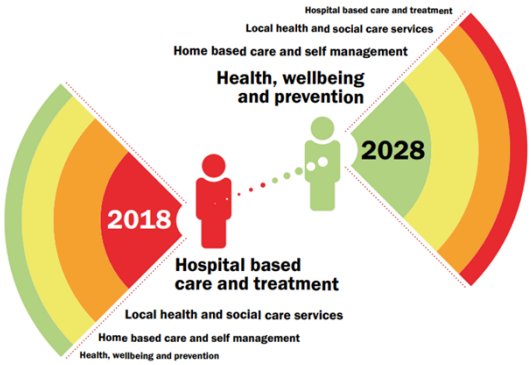

Figure 1: A Healthier Wales Vision

3.4.2 *The Value in Health Programme*

The Value in Health programme's strategy highlights the importance of achieving this in a financially sustainable way, ensuring that interventions maximise the outcomes that matter to people.[4] To achieve this we are proposing an incremental roadmap that takes an agile approach and starts by focusing on areas where technology can have the highest impact.

Enabling person-centred, preventative care requires health and care services to make better use of existing resources and leverage available data and information to improve decision making. Staff need to be able to have access to real-time data and share it to enable collaboration across the whole system. Key Welsh Government sponsored report recommendations seek improvements in the domains of patient safety, flow management and a person's experience in hospital.[5] Digital technologies play a key role in making this possible.

3.4.3 *Once For Wales*

The 'Once for Wales' approach sets standards and expectations that promote interoperability between systems, and access to structured electronic records in all care systems.[6] It is important to note that the Welsh Government is currently refreshing the strategy for Wales and while the 'Once for Wales' approach will not be carried forward, HDdUHB currently use many of these national systems. Therefore, any technology introduced in the future needs to be interoperable with the existing solutions.

3.4.4 *A Digital Strategy for Health and Social Care in Wales*

This sets out the Welsh Government approach to digital and data through its Digital Strategy for Health and Social Care. It is a refreshed document that builds on the strategic direction set out in our 2015 strategy which has been a key enabler of A Healthier Wales. It is designed to deliver our core vision to help people in Wales to lead happier, healthier and

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[2] https://gov.wales/sites/default/files/publications/2021-09/a-healthier-wales-our-plan-for-health-and-social-care.pdf
[3] https://gov.wales/sites/default/files/publications/2019-04/securing-health-and-well-being-for-future-generations.pdf
[4] https://vbhc.nhs.wales/files/our-strategy-to-2024/
[5] National ePatient Flow Management Outline Business Case (Dec 2018)
[6] https://dhcw.nhs.wales/systems-and-services/

longer lives through user-centred digital services built upon better digital skills, partnerships, data and platforms. It is in response to a number of strategic challenges:

- Ongoing recovery of the NHS and social care post-pandemic pressures;
- Raising demographics across our population and more complex co-morbidities;
- Financial constraints for citizens and organisations driven by cost-of-living crisis;
- Raising expectations by citizens for digital services but increased risk of digital exclusion
- A competitive market for the digital and data workforce.

The above are integral drives for the digital enablement plan, and the opportunities highlighted within the strategy are also at the core of the approach we will be taking within the Health Board.

3.4.5 *HDdUHB's Digital Response and Digital Operational Plan*

HDdUHB's vision is "to become the most digitally integrated care organisation in NHS Wales" while empowering "patients and staff to securely access information anytime, anyplace and on any device".[7] The strategy to achieve this vision is outlined in the Digital Response, and further supported by the Digital Operational Plan, which provides detailed, annual plans.

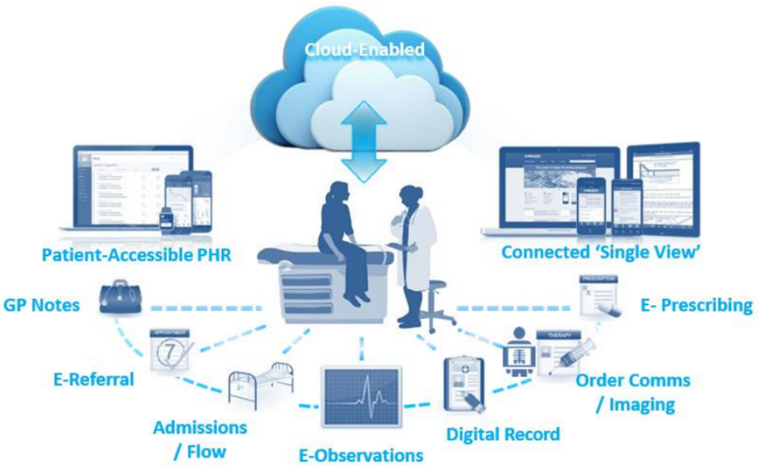


Figure: HDUHB Patient Vision (Digital Response)

In line with this, four key themes underpin the future vision of the digital response:

- **Digitally connected patients**: Empower patients to actively manage their health and care;
- **Digitally enabled workforce**: Enable staff to access shared health and care records;
- **Business Intelligence & Analytics**: Insight driven culture to improve quality, outcome and research;
- **Digital Infrastructure**: Provide secure access and interoperability.

Ultimately, introducing a number of new technologies will allow HDdUHB to align with key strategic aims for health and social care in Wales, and provide better outcomes for patients and staff. It will also support the Health Board's plan for a new Urgent and Planned Care Hospital, which is part of the Board's journey to achieve its long-term strategy and improvement in population health.[8] Digital technologies such as eObservations and patient flow will be a key component of this new hospital, and these will have to be tried and tested to enable successful implementation.

3.5 Strategic Business Imperatives

[7] https://hduhb.nhs.wales/about-us/your-health-board/board-meetings-2021/board-agenda-and-papers-27-january-2022/agenda-and-papers-27-january-2022/appendix-11-digital-strategy/

[8] https://hduhb.nhs.wales/news/press-releases/once-in-a-lifetime-bid-for-health-and-care-investment-in-mid-and-west-wales/

3.5.1 To ensure key Mid and West Wales partners strategic thinking and current challenges were included at the core of the development of the strategic imperatives each of the CEOs from the Health Board, Local Authorities, and Digital Health and Care Wales, along with other strategic leaders within the organisations participated in a dedicated sixty minute one to one semi-structured interview session.

3.5.2 Following the development of the imperatives this provide the overarching strategic direction for the transformation programme to enable focus in the areas that will have the most impact. To enable improved citizen, patient and employee experience and unlock value, we have identified 34 strategic business imperatives, 4 core digital pillars, 4 Delivery Workstreams, and 10 Delivery Projects. These will be the key inputs to transformation and provide the structure and direction.

3.5.3 Further context on each of pillars is outlined in Appendix A

3.6 Clinical Value

3.6.1 There are several national strategies and programmes aimed at improving clinical care and patient safety. The Health and Care Standards framework provided by NHS Wales establish a basis for improving the quality and safety of healthcare services.[9] There is specific reference to safety and dignified care for older patients in response to the recommendations made through the Andrew's report, the Older People's commissioner report 'Dignified Care' and the provisions of the Nurse Staffing Act 2016. The NHS Wales Delivery Framework and Reporting Guidance 2021-22[10] lays out the aim to ensure that people in Wales "have better quality and more accessible health and social care services, enabled by digital and supported by engagement". Similarly, the six goals for urgent and emergency care published by the Welsh Government call for optimal hospital care following admission.[11] Furthermore, the NICE 50 guidance 'Acutely Ill Patients in Hospital'[12] and the Public Ombudsman Wales report 'Out of hours: Time to Care'[13] highlight the need to improve care of deteriorating patients.

3.6.2 A digitally enabled Mid and West Wales will underpin every aspect of health and care. Therefore, everyone will require to have access to the digital information, tools and services needed to help maintain and improve their own health and well-being. Health and social care information will need to be captured electronically, integrated, and shared securely. Digital technology and data to be used appropriately and innovatively to help plan and improve services and ultimately improve outcomes for all.

3.6.3 Through the digital ambition set out in the health and care strategy the strategic benefits illustrated in the following table will be enabled

3.6.4

[9] https://nwssp.nhs.wales/a-wp/governance-e-manual/putting-the-citizen-first/health-care-standards/
[10] https://hduhb.nhs.wales/about-us/performance-targets/performance-documents/2021-22-nhs-wales-delivery-framework-amp-guidance-pdf/
[11] https://gov.wales/written-statement-six-goals-urgent-and-emergency-care-and-expectations-system
[12] https://www.nice.org.uk/guidance/cg50
[13] https://www.ombudsman.wales/wp-content/uploads/2018/03/Out-of-Hours-Time-to-Care.pdf

Hywel Dda Strategic Benefits	Examples of types of outcomes and benefits
Patient safety increased	Increased timeliness and availability of relevant clinical information decreased transcription errors and decreases risk to patients' safety
Positive patient outcomes increased	Easy access increases speed and of diagnosis, care, treatment plan and onward referral
Patient confidence increased	The availability and targeting of accurate and relevant information at the point of contact
Legal compliance maintained	Requirement to comply with policy, legislation, and standards
Healthcare system efficiency increased	Processes are faster, or wasteful processes can be decreased or eliminated
Overall healthcare system costs decreased	Information management and technology improvements eliminate wasteful processes and reduce expenditure
Digital Inclusion	Identifying digitally excluded patients / citizens and providing access to devices and digital skills to enable all across Hywel Dda to safely participate in the digital world

3.7 Becoming more carbon efficient

3.7.1 Finally, the Welsh Government has committed to a NetZero target by 2050.[14] In February 2022, HDdUHB issued a statement highlighting that decarbonisation and establishing energy efficient systems is a priority for the Board.[15] In healthcare, the use of digital technology provides many opportunities to reduce the carbon impact of health and care services. For example, in the 12 months to June 2021 virtual appointments are estimated to have the saved carbon equivalent to taking 40,000 cars off the road for a year, and remote monitoring technologies are estimated, over the next 3 years to reduce patient travel by 28 million miles.[16] Introducing new digital solutions are a first step towards building more efficient health and care services that can support these net zero targets.

3.8 Strategic options

3.8.1 The following are the strategic options to deliver the intended objectives of the Digital Enablement Plan.

[14] https://gov.wales/net-zero-wales

[15] https://hduhb.nhs.wales/news/press-releases/our-commitment-to-carbon-reduction-and-environmental-sustainability/

[16] https://www.nhsx.nhs.uk/blogs/the-role-of-digital-technologies-in-meeting-nhs-net-zero-targets/

	Option 0 *Do nothing*	Option 1 Look to appoint additional resources into the digital team to accelerate delivery	Option 2 Appoint (when required) additional support from agencies to bolster the digital team	Option 3 Appoint a strategic digital transformation partner
Description	Do Nothing – Continue with a current transformation approach within the Health Board, which is reactive and lacks pace of delivery.	Appoint additional workforce to increase the number of projects that the digital team can rollout	Based on the specific programmes of work look to appoint agency staff to work alongside the current workforce to deliver	Procure a strategic digital partner, who will provide capacity and capability that will be able to scales up quickly to allow rapid transformation alongside the current digital team(s)

3.9 Investment Objectives

3.9.1 Based on the strategic context, the following investment objectives have been identified:

- **Timeliness/ Efficiency:** To use integrated digital technology to capture, present and use real-time patient pathway information to improve the timeliness of care and reduce the length of stay;
- **Effectiveness and Patient Safety:** To achieve measurable improvement of patient outcomes by using mobile digital technology to standardise and reduce variation in the management of patient;
- **Equity of care:** To measurably improve admitted patient experience of care by ensuring patients are in the right bed at the right time to meet their needs;
- **Patient Experience:** To improve admitted patient experience by freeing staff time to care using mobile technology;
- **Economy:** To avoid unnecessary hospital inpatient costs by improving local ability to match acute bed capacity with unscheduled care demand;
- **Staff experience:** To improve staff satisfaction by providing them with the digital tools and technology they need to undertake their work more effectively.

3.10 Conclusion

3.10.1 This strategic case builds on existing work conducted. This PBC sets out a template for Health Board to an ambitious digital enablement plan introduce a number of key foundational building blocks and enable transformation of clinical services at pace. As outlined in the Management Case, HDdUHB will capture the benefits of introducing these systems.

3.10.2 Whilst significant progress has been made to introduce digital systems, the NHS in Wales remains a long way from reaching its full potential and ensuring equal service provision across the country. Patients are currently experiencing the longest wait times for treatments seen in decades[17] and releasing capacity to treat patients and

[17] https://www.bma.org.uk/advice-and-support/nhs-delivery-and-workforce/pressures/nhs-backlog-data-analysis

protect beds for non-acute care. A move to digital working during the COVID-19 pandemic has set a unique starting point with strong clinical support on the ground. The user research conducted as part of this work shows unilateral clinical buy-in.

4. Economic Case

4.1 Approach

4.1.1 This section summarises the value for money assessment of the short-listed options, including an appraisal of the benefits, risks and associated costs.

4.1.2 The contract length is anticipated to be 10 years. The maximum contract value will be no more than £75m over the total 10-year contract period, although with no obligation to spend at this level of investment. The maximum contract value has been estimated based on the following components and associated funding assumptions:

- The lessons learned from previous digital transformation projects;
- Estimated costs for the upcoming Digital Transformation Programme based on the upcoming digital projects in development, such as EPMA, Patient Flow / eObservations, Welsh Intensive Care System, replacement of LIMS, and Radiology systems;
- Average spend on digital change - All change activity remains subject to business cases and ad-hoc funding sources. There is no funding source set aside explicitly for this, but work is regularly funded from sources such as Welsh Government DPIF funding, reserves and/or flexible use of capital.

4.1.3 Based on work carried out to date, total cumulative savings ranges from £78m - £239m over the 10-year period. The range is based on impact of the technology. In order to generate the range success and confidence factors were used to determine whether there is High, Medium or Low probability for delivery.

4.1.4 The Economic Case, particularly the options, benefits and risks, were developed working closely with key stakeholders throughout workshops and 1-1 user research sessions.

4.2 Shortlisted Options

4.2.1 The 3 options considered are detailed in the table below:

	Option 0 ***Do nothing***	**Option 1** **Look to appoint additional resources into the digital team to accelerate delivery**	**Option 2** **Appoint (when required) additional support from agencies to bolster the digital team**	**Option 3** **Appoint a strategic digital transformation partner**
Description	Do Nothing – Continue with a current transformation approach within the Health Board, which is reactive and lacks pace of delivery.	Appoint additional workforce to increase the number of projects that the digital team can rollout	Based on the specific programmes of work look to appoint agency staff to work alongside the current workforce to deliver	Procure a strategic digital partner, who will provide capacity and capability that will be able to scales up quickly to allow rapid transformation alongside the current digital team(s)

4.3 Strategic Appraisal

4.3.1 For the strategic ('non-monetary') appraisal, the following strategic assessment criteria were utilised. Through a series of workshops, the working group assessed the ability of each option to support the Programme's strategic objectives. Each

option was assigned a rating of one to three, with three reflecting a high degree of that option being able to support and align with the strategic objective. The options were then ranked based on total scores.

4.3.2 The appraisal criteria and definitions are set out in the following table.

Table 3: Appraisal Criteria

Appraisal Criteria	Description
Strategic Alignment	Alignment to the Health Board strategy, to able transformation at pace.
Staff, care pathways and operational efficiency	Drive the standardisation of care pathways and workflows, improving efficiency, effectiveness, release time to care, resulting in the timely provision of care.
Health intelligence, governance and innovation	Improve standardisation, access, consistency, governance and audit of medicines data for business intelligence, leading to improvements in delivery of services.
Digital maturity	Improves the digital maturity of the organisation
Citizen Experience & Engagement	Ability to design compelling services around citizens and patients. Strong knowledge and experience of user-centred design and change within a healthcare or citizen-services context
Frontline Service Delivery	Change management is a critical part of the programme with adoption of new technology by the workforce being essential to successful delivery. Change management therefore will be a key consideration across all workstreams but has been drawn out in more detail in relation to Frontline service delivery, in addition to the Change and programme management workstream. Co-production is considered to be an enabler for adoption of change.
Digital, Data and Technology	Capabilities to deploy specific digital health technologies and enterprise technologies and will be required to support the broader transformation strategy, design and architecture.
Change and Programme Management	The scale and complexity of the Digital Enablement Transformation Plan will require effective enabling and support services to ensure the plan is successfully delivered and monitored. This includes practical elements such a tracking progress and benefits realisation through to supporting and delivering change activities. In addition, some work orders may have very specific requirements which may require other support, such at HR and Legal

4.3.3 The ratings assigned to each strategic criterion have been defined as below:

- A score of 3 - strong alignment of that option to the strategic criteria;
- A score of 2 – moderate alignment of that option to the strategic criteria;
- A score of 1 – weak alignment of that option to the strategic criteria.

Table 4: Scoring

	Option 0 - *Do nothing*	Option 1 - additional resources into the digital team to accelerate delivery	Option 2 - Appoint (when required) additional support from agencies to bolster the digital team	Option 3 - Appoint a strategic digital transformation partner
Strategic Alignment	3	3	3	3
Staff, care pathways and operational efficiency	1	1	2	3
Health intelligence, governance and innovation	1	2	3	3
Digital maturity	1	2	3	3
Citizen Experience & Engagement	1	2	2	3
Frontline Service Delivery	2	2	3	3
Digital, Data and Technology	2	2	2	3
Change and Programme Management	1	2	2	3
Total Score (Maximum 24)	12	16	20	24
Rank	4th	3rd	2nd	1st

4.3.4 The preferred option would be to enter into a long-term strategic partnership (Option 3) with a supplier to enable us to plan, access and manage the capacity necessary to fully deliver the scale of our digital ambitions. The partnership will do this by fully leveraging the capacity and expertise that exists, both within the Health Board and with a strategic partner, significantly accelerating the pace of delivery of our Digital Response and digital priorities.

4.3.5 When we refer to 'Digital Strategic Transformation Partner' we are describing a contracted relationship with an expert Technology based supplier with skills and expertise across IT and digital. The partner will be flexible in nature, allowing Hywel Dda to access additional capacity and capability at pace which will help us in delivering and supporting our digital transformation ambitions. We expect this type of partnership arrangement to provide us with a long term, stable and sustainable solutions.

4.4 Digital Strategic Transformation Partner

4.4.1 Our digital ambitions currently outweigh our capacity and capability to deliver. There is a need to build increased resilience to maximise confidence in achieving these goals. In terms of current internal capacity there is only sufficient Digital staff to support business-as-usual (BAU) activities, leaving little available resource on-site to support transformation and change work.

4.4.2 Most change activity is dependent on ad-hoc and/or one-off funding sources. Given that we cannot be confident about this funding going forward it is not appropriate to increase our own internal permanent staffing levels, even if was possible to secure

the necessary specialist staff in a highly competitive labour market. At present, digital services bring in ad-hoc contractor support as and when required, alongside one-off 'commissions' of technical support. Often this is time consuming for managers and is challenging to access the right levels of expertise at the required pace. The market for IT resources is competitive and there is a lead time to train up new people and for them to become familiar with the Health Board's complex digital estate.

4.4.3 Alternatively, commissioning one-off packages of work requires tender time which can delay the start to work. Often there is a need for multiple resource types, and it is therefore challenging to coordinate and time this when progressing it by different managers and roles or suppliers.

4.4.4 Over the last few years there has been more significant spend with fewer external IT/technology organisations. These have been considered positive and successful commissions, proving to the Health Board Digital Team that a longer-term relationship with a small number of suppliers would help solve some of the challenges outlined.

4.4.5 A longer-term arrangement with a strategic partner will enable us to plan and manage our external support more efficiently and bring wider benefits in terms of skill and knowledge transfer (in both directions) and career development opportunities. We expect the partnership to work in an integrated way with our internal teams, maximising and leveraging both the partnership and internal Health Board knowledge and expertise.

4.4.6 A strategic partnering arrangement will therefore put in place much needed flexibility to sustainably manage changing peaks and troughs of future project and initiative activity, responding to funding opportunities more quickly, thereby reducing over time the use of ad-hoc support and achieving more sustainable outcomes for patients / citizens. Also, it will be easier and quicker to access 'up-to-date' skills, knowledge and experience and have better/more awareness of the latest digital innovations and access to people who do horizon scanning, ultimately ensuring the Health Board can remain well informed about the fast-moving, specialised digital markets without needing to directly employ these skills. Longer term there may be potential to use the partnering relationship to support some elements of BAU delivery, where this stacks up financially and supports the Health Board ambitions.

4.4.7 The scope of the strategic partner is expected to cover the following elements:

- Support for the upcoming Digital Transformation Programme;
- Support for future IT/digital change and transformation work;
- Provide expert advice around our data / analytics ambitions;
- In addition to the above, it is expected that the strategic partner also brings an external and informed perspective to both setting and directing IT/Digital strategic plans.

4.4.8 This would include, but not be limited to:

- Challenging conventional thinking;
- Exploring the boundaries around the 'art of the possible';
- Bringing ideas and innovation;
- Giving consideration of whole system thinking;
- Applying solution focus to practical outcomes;

- Providing an informed confidential environment as a 'critical friend' to test ideas and concepts; and
- Bring a wider up to date knowledge across a range of related strategic challenges. Examples include, but are not limited to: Cloud Modernisation, License Optimisation, Cyber Security, Office 365, Dynamics 365, Internet of Things, Smart City, Smart Hospitals, and data and analytic.

4.5 Benefit Assessment

4.5.1 This section describes the appraisal of the shortlisted options in relation to non-financial benefits. It describes the benefits framework employed and presents the results of the appraisal of the shortlisted options against this framework.

4.5.2 The key benefits identified that are expected to be realised by through the introduction of solutions.

4.5.3 These benefits outline how replacing the current processes will provide improved clinical value, improved and sustainable operations and help management teams effectively manage demand.

Table 5: Qualitative Benefits

Category	Benefit Description
Increased efficiencies	• Access to electronic patient information that is synchronised across systems leads to reduced manual admin work and removes duplication of effort. • Access to real-time data leads to faster bed turnover. • Data is readily available for audits in a structured format. • Easy access to up-to-date data on patient status leads to improved handovers and quicker discharges. • Time savings due to reduced admin time and improved decision-making. • Time savings due to remote monitoring and automation of tasks.
Organisational	• Increase in compliance due to more accurate, up-to-date data and increased efficiencies. • Reduced complaints and improved brand image due to better patient care. • Improved transfer of reliable information.
Patient experience	• Patients are no longer asked for the same information multiple times. • Staff have increased time to care and feeling less stressed. • Patients and families are aware of next steps and feel more informed.
Patient Outcomes	• Accurate information leads to reduced risk of patient harm, improving patient safety. • Timely access to information enables early intervention.
Staff experience	• Clinicians feel increased confidence due to access to more accurate information. • Improved decision-making due to access to timely and accurate information. • Reduced admin time releases time to care for patients, reducing stress levels. • Remote and easy access to up-to-date information.

4.5.4 Any quantitative savings will likely be the result of reduction in administrative activities, increased clinical capacity through more efficient processes and ultimately better outcomes for patients.

4.5.5 However, at this stage, it is not anticipated the introduction of the digital enablement plan will providing significant cashable benefits, but will provide a reduction in "waste", provide areas for reinvestment to further streamline and improve service provision. Given the current level of demand faced by healthcare staff in Hywel Dda University Health Board, any released capacity is highly likely to be required to be

reinvested in addressing existing constraints in provision of care for patients. Therefore, while monetary savings are not explicitly included in the economic or financial appraisal elements of this business case, the equivalent monetary value of non-cash efficiency savings has been provided as an additional indicator of the impact of introducing the digital enablement plan. Once the workstreams are fully understood following the procurement it will be possible to further quantify efficiencies when developing a fully scoped work programme with the strategic partner.

4.5.6 It should be noted that the status quo option was not scored against either benefit or risk. The key factor to consider was whether any of the options introduced additional benefits in comparison to benefits already delivered under existing arrangements. As such, the status quo option would be judged to score zero across all benefit categories.

4.6 Economic Benefit

4.6.1 As outlined in the strategic case, evidence from case studies suggests that the workstreams outlined within the digital enablement plan can result in improved efficiencies, better patient care and ultimately economic benefit. These economic benefits are outlined in with the PBC. It is important to highlight that we believe these benefits will not result in cash-releasing financial benefit. Instead, they represent the possibility of reinvesting resources into the Health Board.

4.7 Risk Assessment

4.7.1 A high-level assessment of the benefits and risks has been developed with potential mitigations. However, for the Outline Business Case it is anticipated that these will be tested with the current digital enablement group, and wider stakeholders.

Table 6: Risks and Mitigations

Risk	Description	Mitigations
Change Management: Staff adoption	Implementing a number of the technology solutions will require significant change management, whereby clinicians and nurses will be required to change existing processes and adapt to new processes and technology. Staff may lack of willingness to adopt new systems and processes	• Prior to implementation of the technology a capacity and capability assessment of the staff will be undertaken to determine what changes in processes and policies are required; • Engage staff in the procurement process; • Identify local champions
Change Management: Training	There is a risk that inadequate training for the new systems will be provided and staff lack the digital skills to use the technology. This would result in low adoption of the tools, which means benefits would not be realised.	• Make adequate training available to staff - ensure that suppliers provide training materials and embed this as part of existing training processes (nurse induction training); • Ensure staff have time to attend training sessions by considering this when preparing rotas; • Provide access to ongoing support as required. During implementation ensure support staff is available on site; • Ensure that usability is a key requirement during the procurement process; • Identify local digital champions and enable clinicians training other clinicians;

Risk	Description	Mitigations
Change Management: Lack of Ownership	A lack of ownership leads to delays in implementation.	• Involve key stakeholders in the procurement process; • Provide clear ownership of workstreams to individuals; • Ensure stakeholders outside of the digital team are involved throughout the process
Funding: Implementation	Lack of funding to support implementation of technology.	• Ensure that the project is supported by the Board, with each work package being presented for approval when developed;
Funding: Rollout	Lack of funding to support rollout, including training, and additional time required by digital nurses.	• Include additional rollout costs into the financial model;
Funding: Ongoing costs	Lack of funding to support ongoing revenue costs associated with the technology	• Get each workstream business case approved by governance within the Health Board and ensure they are supportive; • Consider external sources of local funding (e.g. DPIF funding); • Include in the Integrated medium term plan (IMTP)
Funding: Integration	Additional funding to provide an integration layer.	• Ensure funding for integration is included in financial model
Implementation: Staff resourcing	There is a risk that the staff required to support these new processes will not be available due to challenges with recruitment.	• Clearly identify staff requirements for implementation and rollout; • Identify digital nurses/ local champions from existing staff
Implementation: Staff resourcing	Capacity of staff in the Health Board to engage in change. There is a risk of change fatigue and confusion with implementing a programme of this scale, alongside several in flight programmes in the Health Board.	• This will be supported by careful planning of the change manage and communications and engagement workstreams to ensure staff are meaningfully engaged and adequately supported through the change.
Implementation: Change	Risk of disruption to clinical service delivery during the implementation of large scale clinical systems	• Robust change management, communication and engagement plans to be developed within respective workstreams to ensure sufficient resources are deployed to enact and embed change.
Implementation: Dual-running site	There is a risk that as the solution is implemented a site may be dual-running with some wards using the new digital technologies and some using traditional manual approaches. This can result in problems during handovers and when managing patient flow through the hospital.	• Quick rollout of systems to minimise the dual-running time; • Trial implementation during pilot to identify best way to implement and roll out technology; • Liaise with site management teams to identify roll-out plans across services and wards that minimise the impact on dual-running
Implementation: Supplier delivery	The supplier is unable to deliver a fit for purpose solution within the required timescales.	• Work with the supplier to develop a realistic timescale for the implementation; • Carefully assess supplier capabilities, including site visits where possible
Implementation: Delay	System implementation takes longer than planned due to lack of resources.	• Work with the supplier to develop a realistic timescale for the implementation; • Ensure NHS resources are available as required; • Identify digital nurse champions to support rollout
Implementation: Inappropriate solution	There may be requirements that are not possible to deliver, or requirements may not reflect local needs, translating into poor adoption.	• Ensure requirements are defined with clinical staff from relevant disciplines; • Involve staff from all sites in the procurement process; • Build on requirements identified in the national PBC as these were developed in conjunction with staff

Risk	Description	Mitigations
Implementation: Estates Capability	Lack of estate capabilities to install any required hardware	• Involve estates team early on in development of implementation plan
Implementation: Programme Complexity	Due to the complexity of the Programme, current timelines for implementation may be over ambitious or unrealistic, resulting in unavoidable delays against baseline and increase in projected costs of delivering the Programme compared to plans.	• The Programme Team will undertake a detailed planning exercise to identify key dependencies and critical path activities.
Implementation: Programme benefits	Variability in programme benefits affects the measurement of delivery to objectives and long-term revenue affordability.	• Benefit estimates will need to be refined and validated in the FBC, informed by procurement. • Workflow and process improvements are a key feature of the preferred option; these improvements will form the basis of credible benefit realisation plans.
Infrastructure: Disruption to BAU	Any disruption to the ward operations when power and cooling are being provisioned.	• Minimise time of disruption as much as possible; • Develop implementation plan in conjunction with wards
Infrastructure: Cyber incident	There is risk that the technology fails, for example due to a national cyber incident.	• Develop robust disaster recovery plan; • Develop robust business continuity plan
Infrastructure: Network coverage	Lack of wireless network on some wards means there will be a coverage gap and mobile devices may not be accessible.	• Assess infrastructure needs for each site; • Consider technology that can work offline; • Install network/ WiFi as required on all wards; • Command rooms updated at Withybush hospital
Information Governance: Patient confidentiality	There is a risk to information governance with patient data made available via a whiteboard in the ward.	• Switch off whiteboard when not in use; • Enable proximity login using ID badges
Interoperability: National systems	Difficulties of two-way interfaces with national systems.	• Identify integration opportunities for both pushing and pulling data; • Work with suppliers to ensure integration is possible
Interoperability: Delay in integrations	Digital Health and Care Wales (DHCW) lack capacity to enable integration with national systems.	• Ensure support of national teams, which can lobby to prioritise work completed by Digital Health and Care Wales; • Submit integration requests as early as possible. • Engage with DHCW during the procurement process; • Consider possibility of funding local interface support that work within DHCW but are focused on HDdUHB

4.8 Assumptions

4.8.1 The assumptions that underpin the cost model are outlined below.

4.9 Implementation Timeline

4.9.1 The draft implementation plan and approach is set out in Appendix C and Appendix E. The implementation of the systems will follow an incremental approach with the technology being available to the Health Board quickly, with an enterprise approach to adoption. Areas, sites will implement / adopt when necessary. Many of the workstreams will be programmed to run concurrently to allow the benefits to be released at pace.

4.9.2 Each of the workstreams has been scoped with a draft project charter and a draft technical architecture.

4.10 Infrastructure

4.10.1 Hardware / Software costs will be included within further business cases against the specific work packages. However, note that these are not considered core costs for the business case and are indicative costs that may be covered by separate funding. The assumption was made that devices would be purchased on a rolling programme over the first 2 years.

4.10.2 Network upgrades are currently being carried out across all acute sites in HDdUHB. In order for the proposed solutions to function, these will be essential.

4.11 Integration / Interoperability

4.11.1 We identified that integration and interoperability with existing national systems would need to be developed and Hywel Dda is working with Digital Health and Care Wales (DHCW) to develop an integration pipeline.

4.12 Optimism Bias and Contingency

4.12.1 The Treasury Green Book published in 2003 introduced a requirement for an adjustment to be made for optimism bias in all business cases. This refers to the known tendency for the costs of projects to be underestimated, particularly in the early stages of developing and costing projects. The adjustment for optimism bias and contingency is a requirement to make explicit, upward adjustments to the costs to counteract this known tendency.

4.12.2 In this business case contingency adjustments have been applied across all cost lines as follows:

- **An optimism bias figure of 22%** has been applied to all hardware, infrastructure, integration, and supplier costs.

4.12.3 This equates to an additional £16m over the 10-year period depending on the work packages selected. The level of optimism bias applied has been influenced by a number of factors, including:

- The contract structure being defined as an existing framework will be used for procurement.
- Project management team requirements and structure identified and defined.
- The technology being well established across NHS organisations.
- The limited supplier involvement in developing the implementation approach.
- The need to develop detailed requirements.

4.13 Summary of Shortlisted Options Appraisal and Preferred Option

4.13.1 Appraisal of the options identified “Option 3 – appointment of a strategic transformation partner” as the Preferred Option, in alignment with the local and national strategies.

5. Financial Case

5.1 Financial Assumptions

5.1.1 A number of additional financial assumptions have been included in the business case as outlined below.

- **Accounting Treatment.** It has been assumed that any purchase devices, and network upgrades, will be a capital expenditure. Additional services provided by the supplier, as well as the annual support, maintenance and hosting fees and costs for the implementation and BAU team have been treated as revenue expenditure with the strategic partner.
- **VAT Position.** It has been assumed in the cost model that VAT will be payable at the standard rate of 20% on all hardware and infrastructure costs (device purchases and network upgrades), as well as all supplier costs (licence costs, supplier implementation support, and ongoing support). Given that HDdUHB will be purchasing existing software, the assumption has been made that VAT is not recoverable. It is possible that VAT could be recovered on the ongoing service provision, although this is subject to the service being considered a fully managed service that has been sufficiently customised by HMRC, and a decision will need to be sought to determine whether VAT can be recovered.
- **Capital Depreciation.** Capital expenditure has been depreciated using the straight-line method over five years. Depreciation will start in the year of purchase, depreciating the full Capital costs until being fully written down at the end of year five. This is accounted for as Non-Core costs, and as such is shown as a separate line item below the Total Financial Cost.

5.1.2 It is recommended that these issues are considered further as part of the development of subsequent local business cases.

5.2 Financial Cost

5.2.1 All financial costs have been calculated for the preferred option based on the following scenario:

- **Hardware and infrastructure:** Include hardware and infrastructure costs
- **NHS Resourcing**: Includes additional costs only for the BAU and implementation teams
- **Solution options**: Included within the overall cost
- **Capabilities**: Represents the cost for purchasing the full functionality for proposed solutions.

5.2.2 The table below illustrates that the total financial cost to HDdUHB, when allowing for costs associated with VAT, and capital charges. These bring the total estimated value to a maximum of £75m over a 10-year period.

5.2.3 Hywel Dda will be taking a different view on digital investment over the next 10 years. We will be looking at “value” rather than cost, apportioning the net value to each investment within the Health Board. The key is to link the business imperative (“Problem”) tracing this through the organisation to establish what the technical solution should or could be, rather than the other way around where the solution is decided upon, and a problem is identified.

5.2.4 Working with a partner, we undertook an exercise across 120 data points to assess our costs as a Health Board, and whether a digital solution (if implemented) could add value. The approach taken to arrive at the potential savings is outlined below:

- Value trees were created across all budget areas, which resulted in the formation of 13 value hypotheses (Appendix F);
- Each of these value hypotheses have been aligned to Hywel Dda business imperatives, with each of the imperatives aligned to a series of value propositions
- Of the 35 value propositions assessed the potential value impact of these gave rise to 25 value propositions were evaluated are quantitative;
- Each of these value propositions were then assessed using activity and financial data readily available within the Health Board;
- Each of the value propositions were further assessed against possible technical solutions and what the impact (i.e. % reduction in x) from this implementation would be;
- A range of impacts was introduced, based on a number of factors such as ease of implementation, delivery timescales. This allowed a financial range to be created.

5.2.5 Table 7 shows each of imperatives and associated financial value propositions. A fully costed model can be found in Appendix D, which outlines each of the data points, and their respective savings due to the impact of technology.

5.2.6 Table 8 shows the Return of Investment (ROI) for the 10-year programme, based on the delivery and implementation plan. It demonstrates that the preferred approach (medium confidence of delivery) will provide a ROI of 107% and will become self-funding in year 1-2 from the exception of delivery.

Table 7: Imperatives and Associated financial value propositions

Imperative Number	Imperative Name	Benefit Case	People Impact (L/M/H)	High Probablity of Delivery	Medium Probablity of Delivery	Low Probablity of Delivery	RAG Delivery Status
6	Joining the Dots	6A) Reduced repeat investigations due to single view of relevant patient information	Low	£2,180,984	£3,441,641	£4,361,968	
17	Operational Running	17B) Improved productivity of non-mobile nursing employees due to provision and use of modem digital tools	High	£3,739,973	£4,986,630	£6,233,288	
11	Optimise Where Care is Given	11B) Reduced number of hospital beds due to efficient patient discharge	Medium	£1,581,184	£2,107,776	£2,635,072	
32	Easy to use Solutions	32B) Reduced time spent using key tools for clinical staff due to better usability and adoption	High	£2,772,387	£4,158,581	£5,544,774	
9	Service signposting	9A) Reduced umbers of patients visiting due to effective Service Signposting	Medium	£675,700	£1,689,101	£2,702,502	
2	Common Priorities	2A) Reduced duplicate regional transformation spend due to aligned organisational priorities	Low	£2,000,000	£2,500,000	£3,000,000	
30	Tech Enabled Operations	30D) Reduced emergency ambulance demand due to call handling and management		£220,210	£440,421	£734,035	
32	Easy to use Solutions	32A) Reduced time spent using key tools for admin staff due to better usability and adoption	Low	£854,220	£1,281,329	£1,708,439	
22	Citizen Outcomes Measures	22A) Reduced readmission cost due to improved first time resolution in	Low	£481,815	£1,202,670	£1,919,790	
14	New Ways of Working	14A) Reduced number Of home care visits due to aligned organisational processes	Medium	£470,000	£705,000	£1,175,000	
16	Workforce Sustainability	I6A) Reduced number of agency Staff due to enhanced employee retention	High	£1,060,202	£1,590,303	£2,120,404	
30	Tech Enabled Operations	30B) Reduction in operational IT costs due to rationalising the digital estate	Low	£270,643	£451,071	£721,714	
18	Demand. Supply & Configuration	18B) Reduced overtime costs due to more effective scheduling	Low	£493,333	£789,333	£986,667	
29	Digitally enabled	29B) Improved patient outcomes to (consultant– led post-first appointment)	Low	£632,239	£842,985	£1,053,731	
24	Real-Time Medical Dashboard	24A) Reduced referral costs due to effective use of real-time patient information	High	£127,400	£203,840	£254,800	
12	Building Capabilities	12A) Reduced financial liabilities due improved operational rigor	Low	£441,942	£662,913	£957,541	
25	Ecosystem Outcome Measurement	25A) Reduced building to alignment and facility sharing across multiple organisations	Low	£353,080	£564,928	£706,160	
17	Operational Running	17A) Improved productivity of mobile workers due to provision and use of modem digital tools	Medium	£262,506	£328,132	£393,759	
29	Digitally enabled	29A) Improved patient outcomes to (consultant– led post-first appointment)	Low	£165,988	£207,486	£311,228	
23	Information Hub	23A) Reduced admin time and cost before starting operating theatre procedure due to effective patient information	Medium	£191,159	£191,159	£191,159	
16	Workforce Sustainability	16B) Reduce recruitment costs of full time employees enhanced employee retention	Low	£171,000	£255,000	£340,500	
30	Tech Enabled Operations	30A) Reduced admin cost due to centralised call handling and management	Low	£85,500	£128,250	£171,000	
16	Workforce Sustainability	16B) Reduced employee onboarding costs due to employ retention	Low	£171,000	£255,000	£340,500	
11	Optimise Where Care is Given	11A) Reduced remote healthcare visits due to patient self-service	High	£29,920	£44,880	£59,840	
30	Tech Enabled Operations	30C) Doctors time saved collating & writing up notes for inter-disciplinary transfer of care due to improved patient information	High	£27,885	£34,856	£38,342	
		Total		£17,460,269	£26,563,285	£35,662,212	

Table 8: Total Financial Cost over the 10-year programme

High Probability of Delivery	Programme Lifecycle - Years										
	0	1	2	3	4	5	6	7	8	9	10
Indicative Cost per year	£7,445,669	£7,445,669	£7,445,669	£7,445,669	£7,445,669	£6,543,973	£6,543,973	£6,543,973	£6,543,973	£6,543,973	£6,543,973
%of benefit realised	20%	40%	50%	75%	100%	100%	100%	100%	100%	100%	100%
Savings per Annum	£3,492,054	£6,984,108	£8,730,135	£13,095,202	£17,460,269	£17,460,269	£17,460,269	£17,460,269	£17,460,269	£17,460,269	£17,460,269
Net (+/-)	-£3,953,615	-£461,561	£1,284,466	£5,649,533	£10,014,600	£10,916,296	£10,916,296	£10,916,296	£10,916,296	£10,916,296	£10,916,296
Cumulative	-£3,953,615	-£4,415,177	-£3,130,711	£2,518,822	£12,533,422	£23,449,718	£34,366,014	£45,282,310	£56,198,606	£67,114,902	£78,031,198
Return on Investment	2%										

Medium Probability of Delivery (Preferred)	Programme Lifecycle - Years										
	0	1	2	3	4	5	6	7	8	9	10
Indicative Cost per year	£7,445,669	£7,445,669	£7,445,669	£7,445,669	£7,445,669	£6,543,973	£6,543,973	£6,543,973	£6,543,973	£6,543,973	£6,543,973
%of benefit realised	20%	40%	50%	75%	100%	100%	100%	100%	100%	100%	100%
Savings per Annum	£5,312,657	£10,625,314	£13,281,643	£19,922,464	£26,563,285	£26,563,285	£26,563,285	£26,563,285	£26,563,285	£26,563,285	£26,563,285
Net (+/-)	-£2,133,012	£3,179,645	£5,835,974	£12,476,795	£19,117,616	£20,019,312	£20,019,312	£20,019,312	£20,019,312	£20,019,312	£20,019,312
Cumulative	-£2,133,012	£1,046,633	£6,882,607	£19,359,402	£38,477,018	£58,496,330	£78,515,642	£98,534,954	£118,554,266	£138,573,579	£158,592,891
Return on Investment	107%										

Low Probability of Delivery	Programme Lifecycle - Years										
	0	1	2	3	4	5	6	7	8	9	10
Indicative Cost per year	£7,445,669	£7,445,669	£7,445,669	£7,445,669	£7,445,669	£6,543,973	£6,543,973	£6,543,973	£6,543,973	£6,543,973	£6,543,973
%of benefit realised	20%	40%	50%	75%	100%	100%	100%	100%	100%	100%	100%
Savings per Annum	£7,132,442	£14,264,885	£17,831,106	£26,746,659	£35,662,212	£35,662,212	£35,662,212	£35,662,212	£35,662,212	£35,662,212	£35,662,212
Net (+/-)	-£313,227	£6,819,216	£10,385,437	£19,300,990	£28,216,543	£29,118,239	£29,118,239	£29,118,239	£29,118,239	£29,118,239	£29,118,239
Cumulative	-£313,227	£6,505,989	£16,891,426	£36,192,416	£64,408,959	£93,527,198	£122,645,437	£151,763,676	£180,881,915	£210,000,154	£239,118,393
Return on Investment	213%										

6. Commercial Case

6.1 Introduction

6.1.1 The Commercial Case outlines the proposed procurement in relation to the digital enablement plan. It considers a range of procurement elements required to deliver solutions, including scope, procurement procedure, approach and timetable. Following approval of this PBC these considerations should be further developed and detailed in the procurement strategy.

6.2 Required Services

6.2.1 At time of drafting this PBC a detailed specification is under development. The Digital Enablement Transformation Plan is large and complex. The expectation is that there is a breadth of skills, capabilities and expertise that can be accessed to enable the delivery of the plan. This includes the requirement for significant experience of health and the wider public sector.

6.2.2 Hywel Dda will need to ensure that as part of the digital enablement plane that any supplier, working with the Health Board will provide any or all of the skills and capabilities set out in this section over the lifetime of the partnership arrangement. This will enhance and compliment the current capability within HDdUHB to ensure a resilient delivery model.

6.2.3 These skills and capabilities include but are not limited to:

- Management consultancy, and business change management;
- Technology and integration;
- Programme management including governance;
- Procurement and commercial;
- Business intelligence;
- Additional programme resources;
- Knowledge transfer.

6.2.4 All new systems will need to integrate with the existing, national systems currently in use at Health Board. It is also important to note that the systems may need to have MHRA accreditation if it performs functionality that classifies it as 'software as a medical device'.[18]

6.3 Procurement Approach

Single vs Multiple Suppliers

6.3.1 Due to the large complex systems that will be required to be commissioned a single partner / provider will be sought. The main driver to procure a single supplier will be to build the partnership arrangement, and also allow seamless integration between. This would be the recommended approach.

Procurement Routes

[18]https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/999908/Software_flow_chart_Ed_1-08b-IVD.pdf

6.3.2 There are several procurement routes available, when seeking to procure and award contracts:

- **Open Procedure:** The Open procedure is a one-stage procurement process which covers exclusion grounds, selection criteria and award criteria. This is typically used where requirements are straightforward, and it is anticipated that only a small number of organisations will respond;
- **Restricted Procedure:** The Restricted procedure is a two-stage process: During the selection stage suppliers express their interest and are shortlisted via a Selection Questionnaire. Shortlisted suppliers are then invited to tender. This procedure is best used when it is anticipated that a large number of suppliers will respond or requirements are typically complex;
- **Competitive Procedure with Negotiation**: Procurement procedure under which contracting authorities may award a contract following evaluation of the bidders' initial tenders. Negotiations can take place on all aspects of the tenders other than minimum requirements. Not suitable for 'off the shelf' requirements;
- **Competitive Dialogue**: Enter into dialogue with suppliers until you find a solution that meets the needs of the organisation. Ideal for complex and high-risk solutions where there are gaps in the requirements, outcomes, contract or commercials;
- **Single Tender Action (STA)**: STA is a procedure that could be used if it can be demonstrated that only one supplier can fulfil the requirements;
- **Innovation Partnership**: Enables organisations to develop innovative products, works or services where no suitable solution exists in the market and then to purchase the resulting products or services;
- **Framework Agreements**: Previously compliantly competed and awarded frameworks setting out the terms available for names authorities to award call off contracts. The frameworks are either *Single Supplier*, where an authority can direct award based on the guidance notes, or *Multi-Supplier*, where buyers will normally undertake a mini competition to select the appropriate service or product within the guidance of the framework. It should be noted that that a framework agreement is not a commitment contract; a 'call off' from a framework agreement is a commitment contract.

6.3.3 Given that the Health Board are aiming to procure well-established digital solutions and Health Boards desire to move at pace, framework agreements were considered the most appropriate procurement route with one single supplier with global reach.

Existing vs New Framework

6.3.4 When exploring whether to set up a new framework or utilise an existing framework to procure the relevant software the following considerations were made:

Table 9: Existing vs New Framework

	Using an existing framework	Setting up a new framework
Pros	• Quicker and easier process • A call off contract could include a clause to say that other Welsh Health Boards are in scope but there is no commitment required from them	• Can set up framework that meets needs exactly • Can add other Health Boards in Wales as named parties
Cons	• Not all suppliers may be on the same framework • Lose opportunity for harmonising across Health Boards in Wales	• Longer process as need to run full competition and negotiate T&Cs (6-12 months) • Additional cost due to extended process

	Using an existing framework	Setting up a new framework
	• Different Health Boards may end up paying different prices for the same service	

6.3.5 The discussions concluded that given that the software is established and in use across NHS organisations, and that HDdUHB are looking to implement as soon as possible, using an existing framework would provide the better option.

6.3.6 Working with HDdUHB's procurement team, several existing frameworks have been identified as potentially suitable for procuring the relevant software, including the frameworks set out in the below table:

Table 10: Potentially suitable frameworks

Framework	Max call-off	Considerations
MCF3	No maximum defined - CCS recommendation no longer than 4 years 4 + 4 years	• Unlimited liabilities might cause some difficulty in supplier ability to sign up to terms and conditions • Terms are not favourable where suppliers are using proprietary methodologies • Can direct award after 4 year
G-cloud 13	3 + 1 years	• Lots 1 - 3 are essentially direct award only – although some level of clarification from the buyer is allowed (recommended value 250k) • Favourable framework for suppliers where there is heavy use of digital services
Service Design and Implementation Services	10 years	• More focused on technical support and implementation services • Includes change management aspect • Twinned with Back Office Software (BOS) framework so that if a clear split between Transformation / Change Management supplier and the software supplier is needed, the software can be purchased through BOS
NHS Consult 18	No maximum defined	• Terms would need to be varied for a framework within a framework scenario • Expires in September 2023, with new version going live in September
Technology Services 3	Up to 7 years (lot dependent)	• Challenging commercial terms for suppliers to sign up to
Cloud Compute 2	3 + 1 years	• Due to go-live in August 2023 but unlikely to meet the timeline required for Hywel Dda • It will run for 3 years with the option of up to 1 year extension

Key point to note

6.3.7 There are some contradictions between Public Contract Regulations (PCR) and the NHS Procurement regulations, the contract limit being one of them. The maximum framework length under Public Contract Regulations (PCR) is 4 years unless there are special circumstances. The call off length is usually determined in the governance of the framework; however, under NHS terms there is no mandated limit on contract duration. Whereas with Crown Commercial Services (CCS) frameworks, they have mandated lengths of call offs, usually dictated by the type of service offering, which may affect the proposed 10-year partnership approach.

Additional factors for consideration

- Duration of contract – appropriate break or extension provisions will enable the opportunity to re-evaluate approach and performance;
- KPI's / SLA's – can have financial implications provided appropriately structured;
- Risk and reward / value-based pricing – typically do not form part of any formal procurement criteria, unless the scope and performance related payments and mechanism for approval / sign-off are tightly defined. Alternative options;
- Procurement regulations are changing – this should give greater flexibility in how we can go to market and contract.

6.4 Commercial Risks

6.4.1 The table below captures the commercial risks and mitigations identified as part of the business case process:

Table 11: Commercial Risks

Risk	Mitigations
Lack of clarity of requirements	• Functional and non-functional requirements gathering conducted using Patient Journeys and persona's depicting the agreed priority pathways. • Requirements gathering included site visits to all the hospital in scope, offering drop-in sessions for all staff, nurses, AHP and clinicians. • Requirements will also be gathered through surveys, targeted 1-1 workshops as well as virtual group workshops. • Patients / Citizens will also be involved in the design of solutions
Influence of emerging and new priorities at a national and local level.	• The capacity of HDdUHB staff to support implementation will be a key factor when assessing suppliers' implementation proposals and their requirements on the Health Board. • HDdUHB will work on the development of the commercial strategy, including procurement route and contracting strategy.
Funding constraints make the commercial strategy not deliverable	• Programme funding intentions will be confirmed with the HDdUHB finance community, relating to the total expected values and drawdown profile. • The tender requirements will emphasise value for money and pricing mechanisms required to work within funding constraints, including a potential variant specification which asks suppliers to model alternative scopes and phasing to work within a stated financial envelope.
Supplier capacity to support implementations in line with the anticipated HDdUHB timescales, aligned to availability of resources	• Capacity to meet timescales and resource constraints will be identified as a key requirement for evaluation during procurement.
Variability in functional scope between suppliers	• To enable the correct balance to be made in the final selection, the selection process will allow narrative responses for critical functional areas, rather than simple 'compliant/non-compliant' responses, so that suppliers can propose how they will meet the need and in particular how they will mitigate shortfalls in current capability and include evaluation of functionality in demonstrations, so that clinical and operational staff can assess whether the proposed solution will practically meet their needs.

6.5 Approach to Risk Transfer

6.5.1 The governing principle is that risks should be allocated to the party best able to manage it, subject to the relative cost. The following risk transfer matrix details how the types of risk are to be apportioned between the Health Board and the preferred supplier. This apportionment will be reflected through provision in the contract proposed as part of the procurement. This will then be reviewed and revisited as part of procurement evaluation and final contract award. Given the complexities of the

programme, each work package will be assessed on its merits and discussed with the strategic supplier.

Table 12: Risks Transfer matrix

Risk domain	Health Board	Supplier	Shared
1. Design risk			✓
2. Construction and development risk		✓	
3. Transition and implementation risk		✓	
4. Availability and performance risk		✓	
5. Operating risk			✓
6. Variability of revenue risks			✓
7. Termination risks		✓	
8. Technology and obsolescence risks			✓
9. Control risks	✓		✓
10. Residual value risks		✓	
11. Financing risks			✓
12. Legislative risks			✓

6.6 Recommendation and timeline

6.6.1 Based on the scope and timescales, the recommended approach is to procure the digital strategic partner using one of the existing frameworks. As part of the outline business case a further analysis will be undertaken, and a defined framework selected once the requirements have been clearly identified.

6.6.2 The indicative procurement timeline for the partner is outlined below. The expectation is that the OBC will be ready for submission by early January 2024. It will then have to go through HDdUHB's governance processes and gain approval from the Sustainable Resources Committee, and then onto the Board. If the Health Board moves forward with procurement, the final contract will need to be approved by the Welsh Government due to the expected value.

Table 13: Indicative procurement timeline

Milestone	Timeline
Final PBC Draft Ready for submission	July 2023
PBC Governance and Approvals	July 2023
Define detailed requirements	July 2023
Select relevant framework(s)	August 2023
Mini competition via framework: Prepare and Issue ITT, Evaluate Responses	August 2023
Preferred supplier selected	October / November 2023
Governance and Approvals (incl. FBC Sign Off)	December 2023
Implementation Starts	April 2024

6.6.3 A mini competition will involve the following steps:

1. **Prepare your Invitation To Tender** (ITT): Although HDdUHB cannot change the basic terms or specification set out in the Framework (the scope of the agreement cannot substantially change);
2. **Supplier Briefing and issue the ITT:** Brief suppliers. Issue all ITT documentation to suppliers on the Framework capable of meeting the requirements. The documentation should include clear instructions on how suppliers are expected to respond to the ITT and how they will be evaluated;
3. **Orals, Evaluate Responses and select Supplier**: Suppliers on the Framework agreement will be awarded a tender on the MEAT basis (Most Economically Advantageous Tender). HDdUHB cannot use award criteria included in the Framework agreement. Each Tender will be subjected to a technical, commercial and financial analysis. The technical analysis will assess how well each Tender has met the criteria set down in the technical proposal, whilst the commercial and financial analysis will assess how each Tender has met the price criteria. HDdUHB is not bound to accept the lowest quote, or any Tender. It is anticipated that the suppliers (no more than 5) will be invited to attend 2 sessions, firstly a strategic interview, and a second interview around the technical and programme capabilities of their bids;
4. **Award Contract:** Once the evaluation is complete the contract can be awarded. Award of the contract will be presented to the organisation which provides the closest match to HDdUHB's expectations, and suppliers on the Framework should be notified of the award decision. The standstill period does not need to be applied at mini-competition, however, HDdUHB should debrief suppliers if this is requested.

Contract Duration

6.6.4 The contract duration will depend on the framework selected, with different frameworks offering different extension periods. The maximum duration of a framework agreement is typically four years. Given that it is estimated that implementation across HDdUHB will take 1-3 years, a longer contract duration is preferable, and HDdUHB are ideally looking for a contract duration of 10 years. Dependent upon the framework used this may consist of a 7+3 or 5+5 contract. Before final award a number of agreed contractual break clauses will be agreed with the supplier and Health Board.

7. Management Case

7.1.1 This section outlines the proposed governance approach, digital roadmap and high-level implementation plan for the project.

7.1.2 The delivery of this programme will be challenging. Whilst the case for change across HDdUHB is compelling, careful planning for the design and implementation phases will be required to deliver against HDdUHB's strategic ambitions. This will need to be supported with a robust resourcing plan and alignment with enabling programmes and as such as the first work package will be to define and scope the full programme with associated milestones.

7.1.3 This chapter sets out the approach that HDdUHB will take to implement and deliver the Programme, the programme governance, management and assurance arrangements to ensure robust oversight and scrutiny, the change management plan, the plan for infrastructure, integration and data migration, the benefits realisation strategy and approach to risk management to maximise adoption of the new solution.

7.2 Governance

7.2.1 The overall project will be managed by a Senior Responsible Owner, supported by a Programme Lead, who will lead the project team. The project team will work closely with clinical and operational staff from all sites to ensure that requirements of the solutions meet the needs of users.

7.3 Programme Team

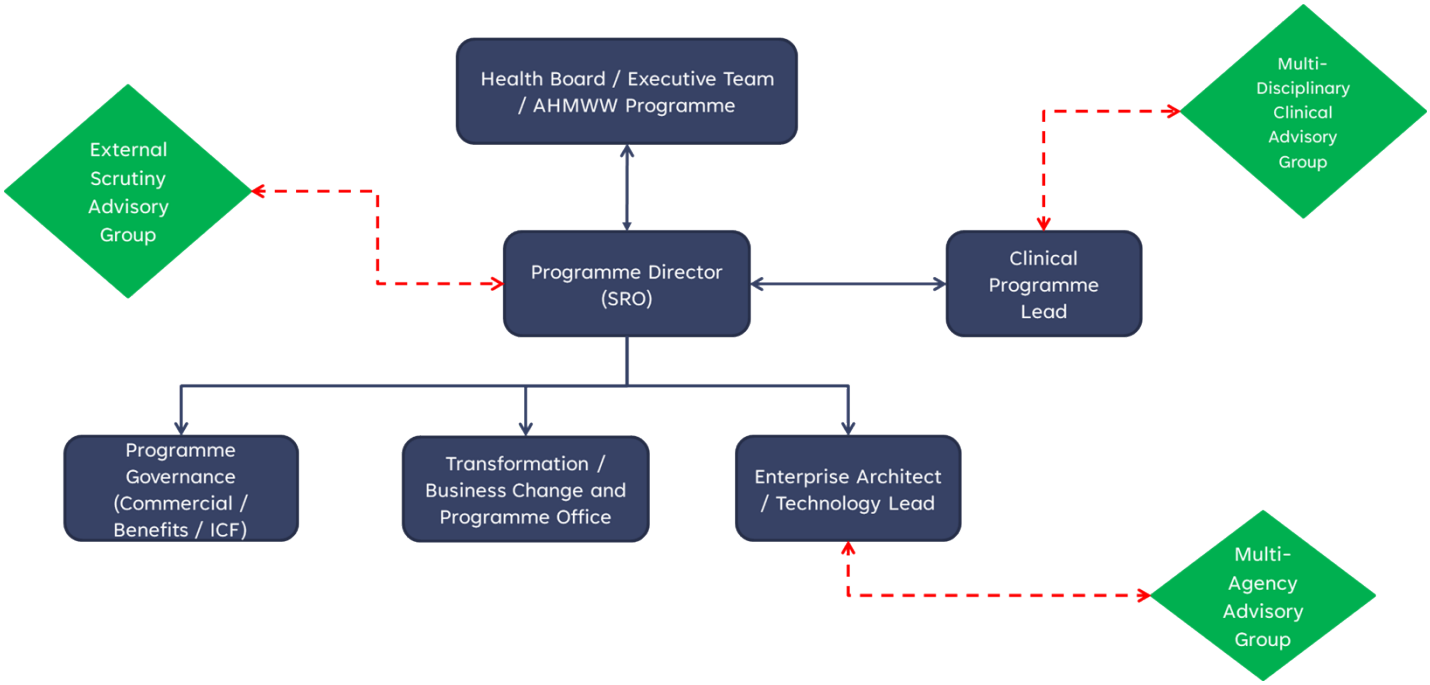
7.3.1 During the setup of the programme, the programme will be established to incorporate the following roles:

Table 14: Programme Team

Role	Description	Existing Role?
Senior Responsible Owner	To represent the project at an executive level. To advise on how project needs to meet strategic goals of the organisation. Final escalation point within project governance.	Y
Programme Lead	Overall day-to-day responsibility for project. Managing project managers. Engage and communicate at executive level within Health Board.	N
Chief Nursing Information Officer (CNIO)	To act as a point of reference across all aspects of the programme.	Y
Chief Clinical Information Officer (CCIO)	To act as a point of reference across all aspects of the programme.	Y
Programme Manager	Manage daily project activities. Provide Health Board wide project co-ordination. Communicate project status issues and events to Health Board leadership. Provider Leadership to Project Team.	N
Change Design Officer	Oversee change requirements of the project and assess impact on change plan within the organisation. Support gap analysis, 'as is' process capture and future state process mapping. Deliver Change Action Plan. Support Benefits workstream as appropriate.	N
Commercial / Benefits Lead	Involved in outputs of Business Change Gap Analysis undertaken for current state processes. Baseline all identified benefits and measure pre-go-live. Production of a clear benefits strategy and detailed plan. Establish working groups to focus on benefits. Pre and post go-live case study tasks to be completed and documented. Provide clear commercial advice to	N

Role	Description	Existing Role?
	ensure that we are introducing the concept of intelligent client function into the Health Board	
Clinical Safety	Validate clinical risks and issues.	Y
Technical / Data Implementation Lead	Responsible for providing input into solution design and configuration from a system administration perspective.	N

An example of the proposed accountability structure is attached below:



7.4 Evaluation User Group

7.4.1 To ensure that the requirements of the solution meet the needs of users, clinical and operational staff will be involved throughout the procurement and implementation process. The proposal is to set up a number of external scrutiny groups, which would consist of representatives from all clinical departments and all sites to ensure local needs are met industry leaders as well, such as Gartner to ensure that the supplier is

7.5 Shared learning

7.5.1 A strategic approach to shared learning in relation to implementation and resource allocation will be considered by the Steering Group. The HDdUHB Steering Group is leading on an intentional facilitation and coordination effort with the other programmes under the A Healthier Mid and West Wales Programme to ensue synergy of programmes and an understanding lesson learnt from those implementing programmes of transformation and change.

7.6 Programme assurance

7.6.1 The Programme Team will manage the Programme Plan, the risks, issues and all programme documentation according to established good practice, using guiding principles drawn from Managing Successful Programmes and PRINCE2 Agile. As permanent programme governance is developed, it is expected that the Steering Group would be accountable for the Programme Plan but the responsibilities around management of this plan would remain with the Programme Team.

7.6.2 A standard suite of reports will be produced to ensure effective visibility of timely and accurate management information at the appropriate level to maintain momentum of the Programme. This will include fortnightly workstream progress reports, monthly Steering Group reports and regular reporting for the Steering Group and other local and national governance boards as required.

7.6.3 In addition to regular reporting, the Programme will establish a cycle of assurance reviews during the implementation lifecycle. These “Gateway” reviews, or decision points, will provide greater visibility and improved management of risk at each stage of the implementation, improve stakeholder confidence in Programme delivery, provide early warning of risks and secure expert insights for the Programme. The expected gateways are summarised below:

- Readiness – covering strategy and programme planning;
- Workflow and configuration – workflow design, operational policies & procedures, configuration and plans for technology, testing and training;
- User and system readiness – testing progress, training strategy and cutover strategy;
- End user training and cutover – training delivery and progress, detailed cutover plan and arrangements for go-live; and
- Closure – post-implementation review and benefit realisation monitoring and evaluation.

7.6.4 In addition, the programme assurance framework will align and be subject to the national assurance processes around technical and clinical design:

- Welsh Clinical Informatics Council (WCIC)
- Welsh Information Development Group (WIDG)
- Welsh Informatics Assurance Group (WIAG)
- Welsh Information Governance Board (WIGB)
- Welsh Technical Standards Board (WTSB)
- Welsh Information Standards Board (WISB)
- Application and Architecture Assurance Group (AAAG)

7.7 Implementation Plan

7.7.1 As per the preferred option implementation of the proposed workstreams will follow an incremental approach with the technology being rolled when required. The approach will be to ensure that all the foundational technology is in situ, to allow the benefits to be released quicker. This will mean that multiple implementation projects will be undertake simultaneously.

7.7.2 Implementation will be prioritised based on work packages

7.8 Digital Roadmap and Architecture Map

7.8.1 The Digital Roadmap visualises the rollout of the programmes solutions.

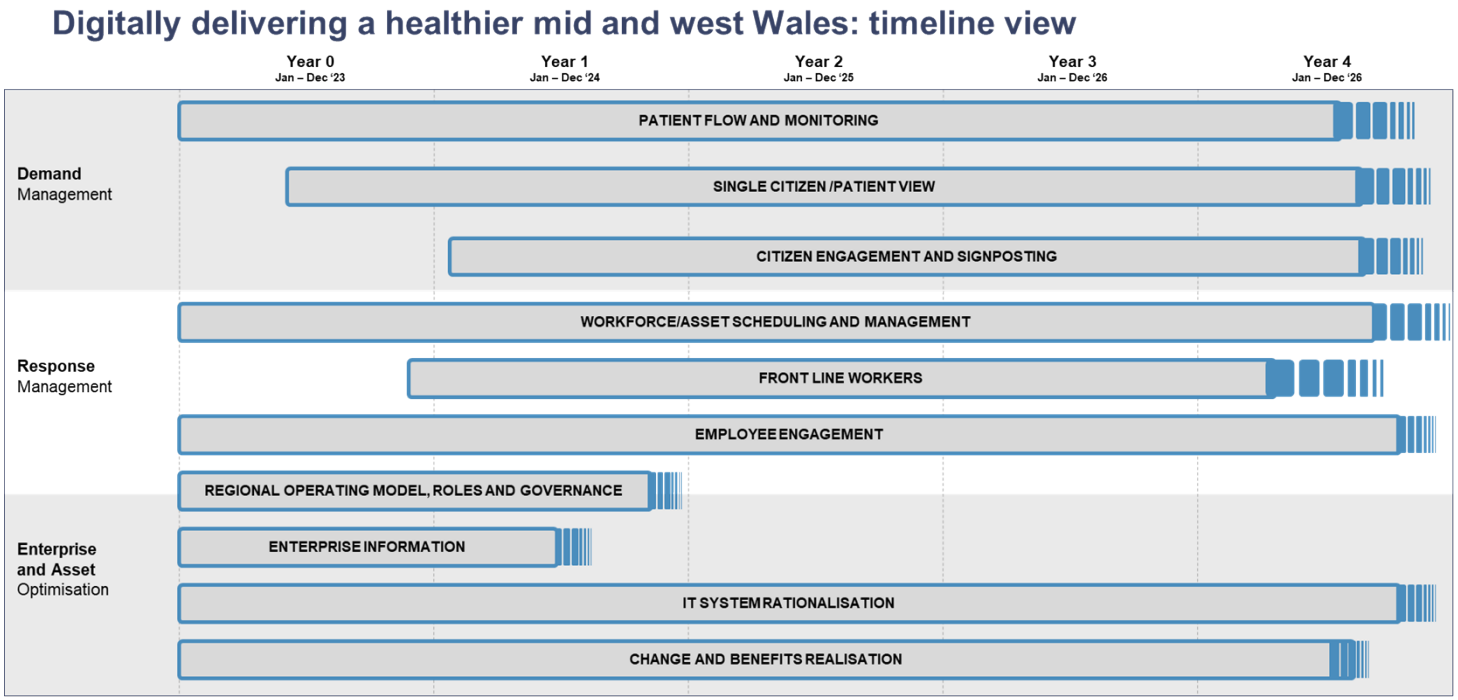
7.9 Implementation Approach

7.9.1 The implementation approach will be governed by each work package and will result in further business cases, and implementation plans being provided to the Board for approval.

7.10 Draft Implementation Timeline

7.10.1 The figure below sets out the suggested implementation timeline, which sees the establishment of the programmes and proposed timelines for the workstreams.

Figure 2: Provisional Draft Implementation Timeline



7.10.2 A more detailed implementation plan will be developed with the preferred supplier as the first work package, covering the following:

- Refining the Digital Enablement Transformation Plan and associated timelines for the 10 year period of the plan;
- Refining the target Enterprise Architecture for HDdUHB;
- Develop detailed implementation plans. This includes detailed Implementation Plan for Years 1-3 including the required Work Orders to deliver this activity.
- Define the Technology Roadmap and resourcing approach;
- Develop the Benefits Management Approach and, where possible, collate existing baselines.

7.11 Risk Management

7.11.1 Risk identification and management will be a continual process in the programme to monitor the level of exposure to risk at any point and keep unwanted outcomes to a minimum, particularly given the proximity of these systems to patient care. A risk register has been developed as part of this PBC. The Programme Team will ensure that the following risk processes are in place:

- up-to-date risks register open to anyone to review. Formal updates will be made by designated individuals only;
- all risks will be reviewed regularly by the team, and key risks escalated to the Programme Lead for management by exception;
- significant risks will have mitigation plans developed and will be formally reviewed;
- a decision-making process supported by a framework of risk analysis and evaluation; and
- processes in place to monitor risk.

7.11.2 The risk management approach will follow the already established approach with the Health Board. It will be the responsibility of all team members to identify risks as and

when they become aware of them, and to use the risk management processes. These processes ensure that the risks are logged and assigned to owners to manage and continually review the individual risks. The project managers will have a key role in monitoring, reviewing and managing action delivery to mitigate or resolve risks.

7.12 Change Management

7.12.1 The implementation of the digital enablement is expected to have significant impact on frontline staff, and it will be important to minimise any negative impact during the implementation period.

7.12.2 Effective change management and visible leadership will be critical to the success of the programme in order to:

- achieve buy-in across stakeholder groups from all sites and departments;
- gain commitment from users, recognising potential disruption to services and additional effort required during the implementation period;
- support the changes in working practices that the new arrangements will require; and
- realise the benefits of implementing technical solutions.

7.12.3 To ensure effective change management HDdUHB will develop the following:

- Change Management Strategy: to include an assessment of the potential impact of the proposed change on the culture, systems, processes and people. An underpinning communication strategy for affected disciplines and staff will also need to be defined;
- Change Management Framework: this sets out the organisational structure and personnel required to direct, manage, implement and evaluate the change, along with details of roles and responsibilities, and to support staff through the change; and
- Change Management Plans: this defines the communication required for the implementation phase.

7.12.4 Furthermore, the team will include a Change Design Officer to oversee change requirements of the project and assess impact on change plan within the organisation, as well as local Digital Champions to support engagement and training of clinical and operational staff.

7.12.5 It is recognised that continuous change management support will be required throughout and consideration will need to be taken to adapt change management plans to each hospital site as required as the implementation progresses and as lessons are learned.

7.13 Staff engagement and communications

7.13.1 To optimise the implementation, adoption and subsequent benefits of any new solutions, HDdUHB will ensure a comprehensive communications and engagement plan which runs in parallel to the change management workstream. Further work will need to be undertaken to develop the communications and engagement approach. Reflecting on lessons learned from previous clinical technology deployments in the Health Board, such as the recent Welsh Nursing Care Record (WNCR), the following areas will be explored in further detail:

- Approach to ensure user engagement throughout, including in the design of any new solutions and redesign and alignment of processes;

- Supporting adoption through close, dedicated programme leadership, and leverage a network of “digital champions” to provide frontline support to colleagues;
- Approach to ensure that sufficient training (and time to train) is available to staff, including a training gap analysis to inform training plans;
- Approach to ensure the benefits of digitally enabled transformation for various staff roles are clearly articulated and well communicated to bring everyone through the change journey.

7.14 In-flight programmes

7.14.1 There are several significant in-flight and planned digital programmes taking place in HDdUHB such as the eObservations and Patient Flow, and the Digital Medicines Transformation Portfolio. These include the Shared Medicines Record project, the Patient Access Project and the Primary Care Electronic Prescription Service programme. In addition, a number of national digital programmes are also taking place or planned, such as the all-Wales Electronic Maternity Record (WEMR), the Wales Intensive Care Information System (WICIS), Radiology Information System (RIS) and Picture Archiving and Communication System (PACS).

7.14.2 These programmes will take up significant capacity in resources and also have direct impacts on elements of the programme and the strategic partner will be utilised to provide support to the change capacity of the organisations’ staff members and teams involved.

7.15 Training

7.15.1 As previously noted, the level of change associated with the programme in HDdUHB is high. As such, a robust training plan and approach will be designed and approved in collaboration between HDdUHB (including representation from all relevant clinical and hospital staff user groups as well as digital and technology staff) and the chosen implementation partner.

7.15.2 The following assumptions and requirement are specified and will drive the definition of the training approach, plan and requirements to allow a safe use of the system:

- **Training approach:** It is envisaged that a blended training and learning approach will be taken and tailored to the relevant clinical and hospital staff as well as digital and technology staff.
- **Training and learning content delivery:** HDdUHB is considering that the training is provided, as a minimum, through the following based on which solution is adopted.
    - Classroom based training taking place which will include 10 to 15 attendees per class, to ensure efficiency;
    - Access to sandbox/test environment to allow the users to access the system in an environment separate to the live solution;
    - Self-study virtual content, e-learning;
    - Short instruction videos, rather than a manual; and
- **Mandatory training:** Access to the live versions of the solutions will only be provided to those who successfully completed the training and the relevant competence tests
- **Competence tests**: To ensure the safe use of the systems, competence tests to confirm the users’ ability to navigate and use the system will be put in place and mandated. These tests will be developed by the programme teams, in

collaboration with key clinicians, pharmacists, nurses, AHPs and management.

- **Retraining**: When there are significant upgrades to the solutions, users will be required to undertaken training on the new features. Users will not be required to complete retraining on the entire solution but just the changes.

7.16 Integration and interfacing

7.16.1 HDdUHB is considering a Health Board wide approach to an integration engine. Further consideration and analysis will be required to determine how HDdUHB will deliver the integration engine. This analysis, along with the funding requirements, will be covered in a separate Health Board wide programme.

7.16.2 The integration and interfacing requirements will form part of the work packages, however it is acknowledged that this is risk to the programme and adoption, implementation of the solutions.

7.16.3 As part of the Implementation Readiness Preparation phase, the below steps will be taken to ensure the detailed integration and interfacing requirements and design are defined:

- Conduct a thorough assessment of HDdUHB's existing systems and data sources (as-is analysis), identifying key integration points and potential challenges to be addressed during the integration process.
- Outline the development of robust interfaces and APIs that enable seamless data exchange and integration between solutions and existing national as well as local systems, ensuring interoperability and smooth information flow.
- Define the methodologies and tools used to map data structures, formats, and terminologies between solutions and existing systems, ensuring data consistency and compatibility.

7.17 Data management

7.17.1 Given this is a large-scale transformation programme with complex and significant impact, it is important to understand and address data management issues. A structured and comprehensive approach to data management will enable the successful delivery of this programme. The following are the considerations to be developed further as the programme evolves:

- Define which application components in the landscape will serve as the system of record or reference for enterprise master data;
- Understand how the data entities will be utilised by the business capabilities, business functions, processes, and business and application services;
- Understand how and where the data entities will be created, stored, transported, and reported;
- Define the level and complexity of any data transformations required to support the information exchange needs between the solutions; and
- Identify the requirements for software in supporting data migration and integration will be (e.g., use of Extract, Transform, Load (ETL) tools and data profiling tools).

7.17.2 Digitising the paper-based processes in HDdUHB presents an opportunity to define a robust approach to integration and storage of various data sources while ensuring data quality, privacy, and security measures are in place. As part of the current pre-

implementation, discovery and procurement phase, the Programme Team will aim to:

- Identify the various sources of data in the Health Boards ecosystem, such as patient records, prescription data, laboratory results, and other relevant data types.
- Describe the processes and technologies that will be used to integrate data from different sources and ensure data consistency and integrity;
- Outline the proposed infrastructure for data storage, including considerations for scalability, security, and compliance with data protection regulations;
- Highlight the strategies and tools that will be implemented to ensure data quality, accuracy, and completeness, including data validation, data cleansing, and data enrichment techniques;
- Emphasise the measures that will be implemented to protect sensitive patient data from unauthorised access, including encryption, access controls, temporary locked viewing, and audit trails;
- Discuss the plans and mechanisms for regular data backups, as well as disaster recovery procedures to ensure minimal data loss and downtime in case of unforeseen events.

7.18 Data digitisation

7.18.1 As part of the pre-implementation, discovery and procurement phase, the Programme Team has planned to work on defining an appropriate data digitisation approach to identify the requirements for scanning, storing and archiving paper prescriptions and other relevant paper data required for the provision of care.

7.18.2 Initial planning has indicated that paper charts of patients receiving care during the go-live period will be digitised ahead of go-live to ensure.

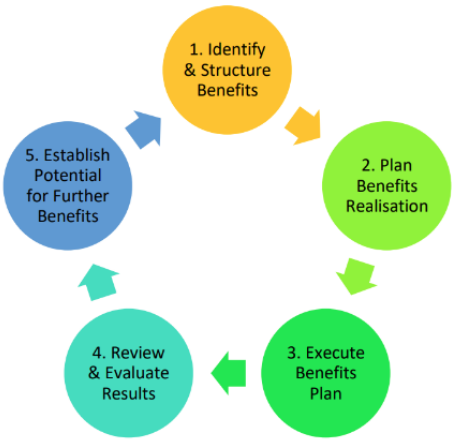
7.19 Data governance

7.19.1 Robust data governance is paramount to establish a framework of accountability, compliance, and data management practices, enabling the organisation to maintain data integrity, protect patient privacy, and meet regulatory requirements within the new systems. There will be data governance considerations to ensure that the enterprise has the necessary dimensions in place to enable the transformation:

- Define the roles and responsibilities of individuals or teams who will be accountable for the quality, privacy, and security of data;
- Establish specific data governance policies, standards, and procedures that will be implemented to ensure consistent data management practices, including data classification, data retention, and data access controls for solutions. This would be done in-line with existing data governance processes at HDdUHB and integrates with it;
- Explain how data auditing and monitoring mechanisms will be implemented to track data usage (especially Patient Level data), identify any anomalies or breaches, and ensure adherence to data governance policies;
- Include data training programs to educate potential users on data governance principles, security practices, and data handling procedures as part of the main training programme.

7.20 Benefits Realisation and Measurement

7.20.1 The economic section identified a number of non-financial benefits to be delivered by the implementation of the programme. Prior to implementation and awarding of work packages it is recommended that further analysis of current processes is carried out in order to develop detailed baseline measures against which to monitor and assess benefits. the benefits realisation strategy, where owners are assigned to each outcome. A proposed approach for benefits realisation is shown to the right.



7.20.2 HDdUHB has a dedicated Benefits Realisation Manager who has joined the Digital Team. They will lead on assessing whether the benefits outlined in Section 4.5 are realised, and work with local teams to manage benefit realisation. As part of their role, they will assign owners to each identified benefit. Note that the preferred supplier will also provide capability to support benefit realisation and measurement.

7.20.3 It is important to note that which benefits are realised is dependent on the which programme is being implemented at the time, and also the synergy across the wider A Healthier Mid and West Wales programme.

7.21 Programme evaluation

7.21.1 The purpose of post programme evaluation is to improve delivery through lessons learned during the programme delivery phase and to appraise whether the programme has delivered its anticipated outcomes and benefits. It will further support achieving better value from future procurements.

7.21.2 HDdUHB is committed to ensuring that a thorough and robust post-programme evaluation is undertaken at key stages in the process to ensure that lessons are learnt. The Health Board will need to continue to obtain and assess baseline data in the years prior to and post implementation. This will enable the Health Board to compare current processes with post-implementation processes and identify which benefits have been achieved and which have not.

7.21.3 The evaluation will be carried out in line with best practice and will measure the programme against the following factors:

- The extent to which the programme objectives have been met;
- Measurement against the Benefits Realisation Plan;
- The cost of the programme and the extent to which it can demonstrate value for money;
- The programme outcome compared with the Business as Usual or 'Do Nothing' scenarios;
- The economic viability of the programme in comparison with BAU;
- Risk Allocation and an assessment of risks presenting during the programme;
- Suitability of the timetable;
- Functional Suitability – how the new approach compares to the ePMA requirements set out during the commercial;
- User satisfaction; and,
- Procurement route.

Appendix A - Digital Pillars

Citizen Engagement

Improved Citizen digital engagement is required to enable the delivery care and condition management outside of clinical settings and to support citizen self-management.

Citizen digital engagement is required to allow citizens managing or receiving care to interact more effectively across the ecosystem, for example virtually providing pre-clinical checks information, virtually requesting, and managing appointments, virtually raising requests and asks back into the ecosystem.

Citizen digital engagement should be managed through a single front door that directs citizens and their families to right place to interact. Equally it could be delivered by a series of applications orchestrated through regional application store that direct, alert and action into core platforms.

Proposed Approach:

- Simplify a disparate user experience by establishing a single front door for health and care services across the region;
- Leverage / Promote existing local good practise around citizen and patient engagement to a regional level or establish a new regional capability that integrates into existing organisational solutions and national platforms including NHS Wales App;
- Extend existing work to create an Application Store for integrated health and care in Mid and West Wales (aligned to national programme);
- Implement a single citizen identity management solution.

Health and Care Co-ordination and Collaboration

Workforces require a set of digital capabilities, as do citizens to allow them to digitally interact and manage their own workloads across the ecosystem and view the right information at the right time to support decision making and support citizen and patient flow across numerous pathways and across the spectrum from illness to wellness.

The engine behind citizen engagement and care co-ordination is likely to be a core platform augmented by remote condition monitoring capabilities, solutions and devices and underpinning data fabric.

Proposed Approach:

- Establish a regional solution for workforce collaboration to support care co-coordination and citizen flow across care pathways.

Situational Awareness: Digital Operations and Control Centre (The DOCC)

Mid and West Wales has a significant opportunity to shift the dial from alarm receiving centres distinct from Virtual Wards to next general digital operations and control centres which integrate with the Welsh Ambulance Service and provide intelligent scalable region-wide real time situational awareness across the region.

The DOCC will be a global exemplar of integrated health and care delivery managing near real time or real time operations to support shifting the balance of care out of clinical settings into the community and home where it is appropriate and responsible to do so.
This approach has 5 core capabilities:

1. **Region wide – situational awareness, monitoring, and alerting (new)**
   This is the engine at the heart of the DOCC drawing in information and data from the four areas described below. This will support the real-time planning and prioritisation of work in both clinical and community settings at regional scale.

   Proposed Approach:
   - Establish a Digital Operations and Control Centre / Command Centre with a focus on Virtual Wards and Assisted Living or 'in hospital' Acute monitoring and extend to Virtual Wards and Assisted Living as a seed initiative.

2. **Patient and Citizen Condition Monitoring**
   This will be a mix of new solutions and data integrated from existing solutions. A new remote monitoring solution allowing citizens to be manage and monitor conditions in the best environment for them. This person-centred service will be established to support the reduction of expensive hospital stays and unnecessary visits whilst empowering citizens and their families to better manage their conditions.

   Proposed Approach:
   - Establish Virtual Wards for remote patient Monitoring in the community – integrate into DOCC
   - Extend Assisted Living capability – integrated into DOCC
   - Citizen Digital Engagement to support better interaction with services.

3. **Resource workforce planning scheduling and management**
   Leveraging data from existing and new solutions to understand the capacity of the workforce across the entirety of the ecosystem to support the delivery of services in new and different ways. Ensuring citizens get the right help at the right time by the right service and automating transactional tasks.

   Proposed Approach:
   - Establish a Regional Trusted Data Fabric Platform to integrate and surface data from existing workforce planning and rostering solutions into the Digital Operations and Control Centre to drive real time insight into capacity and availability of workforce

4. **Asset management, tracking and monitoring**.
   Delivering remote monitoring at scale in health and care and improving patient flow through hospitals and citizens receiving care support at home, both will require new and existing assets to be deployed. These need to be managed, tracked, and monitored and managing this effectively allows for a better understanding of the capacity and availability of those assets enabling improved patient and citizen flow through the system.

   Proposed Approach:
   - Establish a Regional Trusted Data Fabric platform to consolidate a view of assets and availability across the region.

5. **Request and referral tracking and management.**
   A transformed service model delivering enhanced care in the community, enabling citizens and the workforces to collaborate more effectively and digitally engage, will generate a central hub of requests that need to be managed, processed, and resolved.

A central automated platform to manage requests, flow or work and care pathways will be established.

Proposed Approach:

- Establish a regional solution for workforce collaboration to support care co-coordination and citizen flow across care pathways.

Regional Trusted Data Fabric

Mid and West Wales has an opportunity to address the data challenges identified in the strategic imperatives, the organisations working better together workstream and through the technology assessment to become a global digital exemplar to establish a regional trusted data fabric that brings together health and care information across the region related to three key capabilities:

1. **Single integrated health and care record**
   An open and available set of information will enable the workforce in the health and care ecosystem to make improved decisions, focus their time on delivering high quality care and less time on routine administration of data whilst supporting the establishment of new models of care and new solutions empowering citizens.

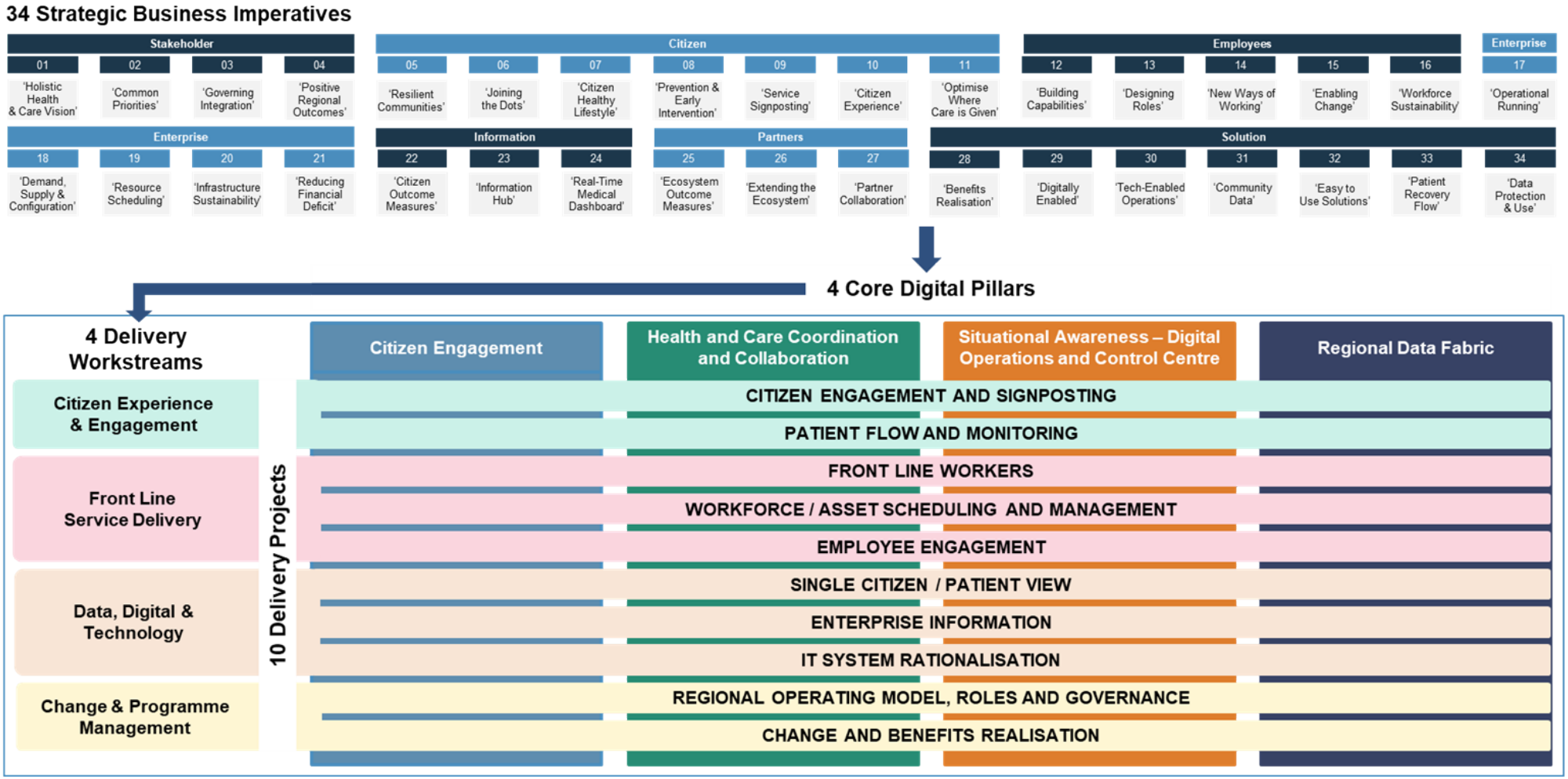
2. **Analytics, Advanced Analytics and AI**
   Building on the good work of all organisations to bring data together to drive insight and service direction, for example supporting elective backlog challenges.

3. **Integration and Interoperability**
   An implicit and required capability to drive integration and interoperability of data between existing and new solutions and enable an open data architecture that can be opened to national solutions and external parties to promote innovation and sharing and creating a single view of the citizen.

Proposed Approach:

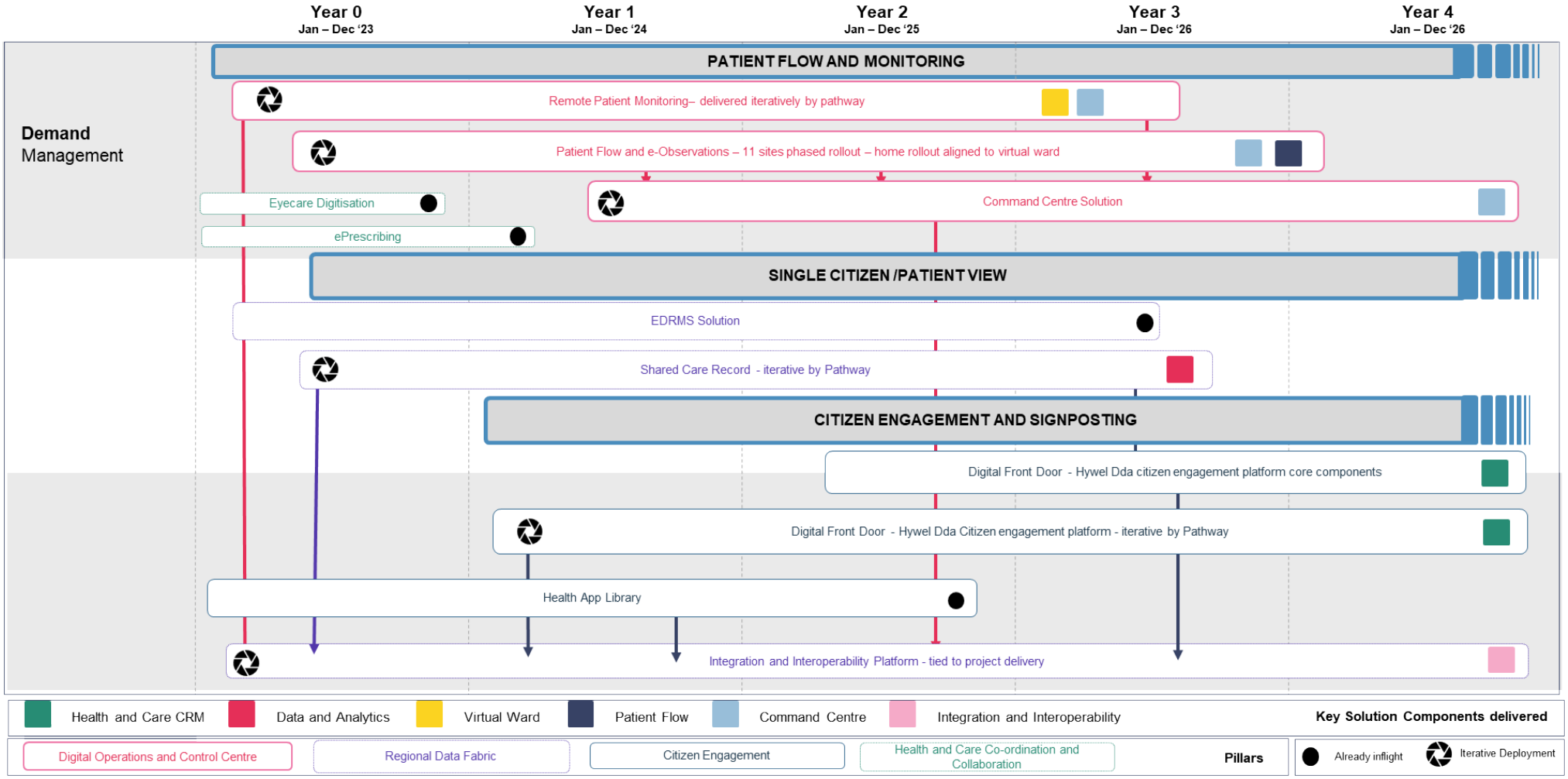
- Establish a Regional Trusted Data Fabric platform to bring key data sets together across region.

Appendix B – Programme Delivery Approach

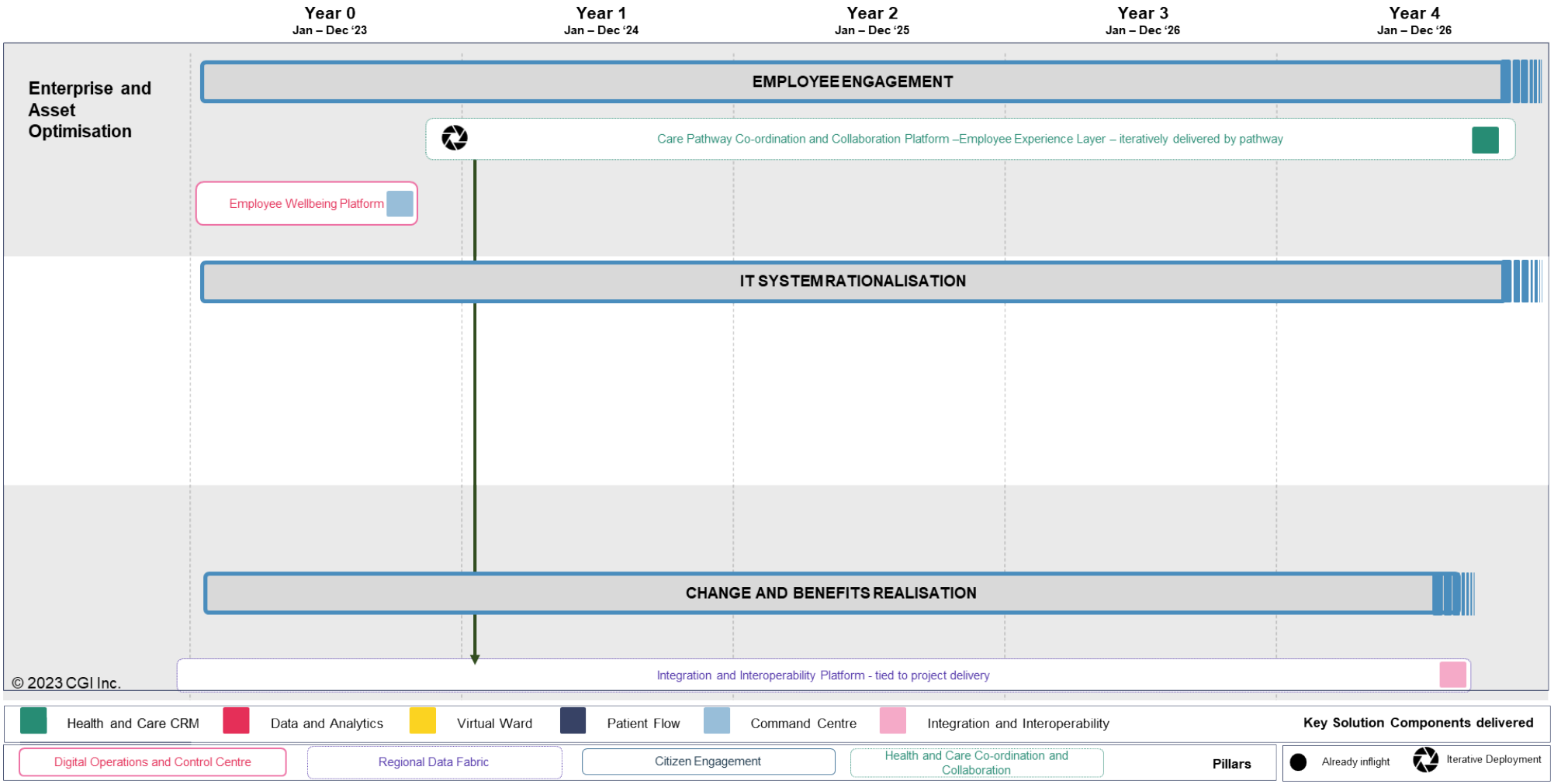


Appendix C – Proposed Timeline

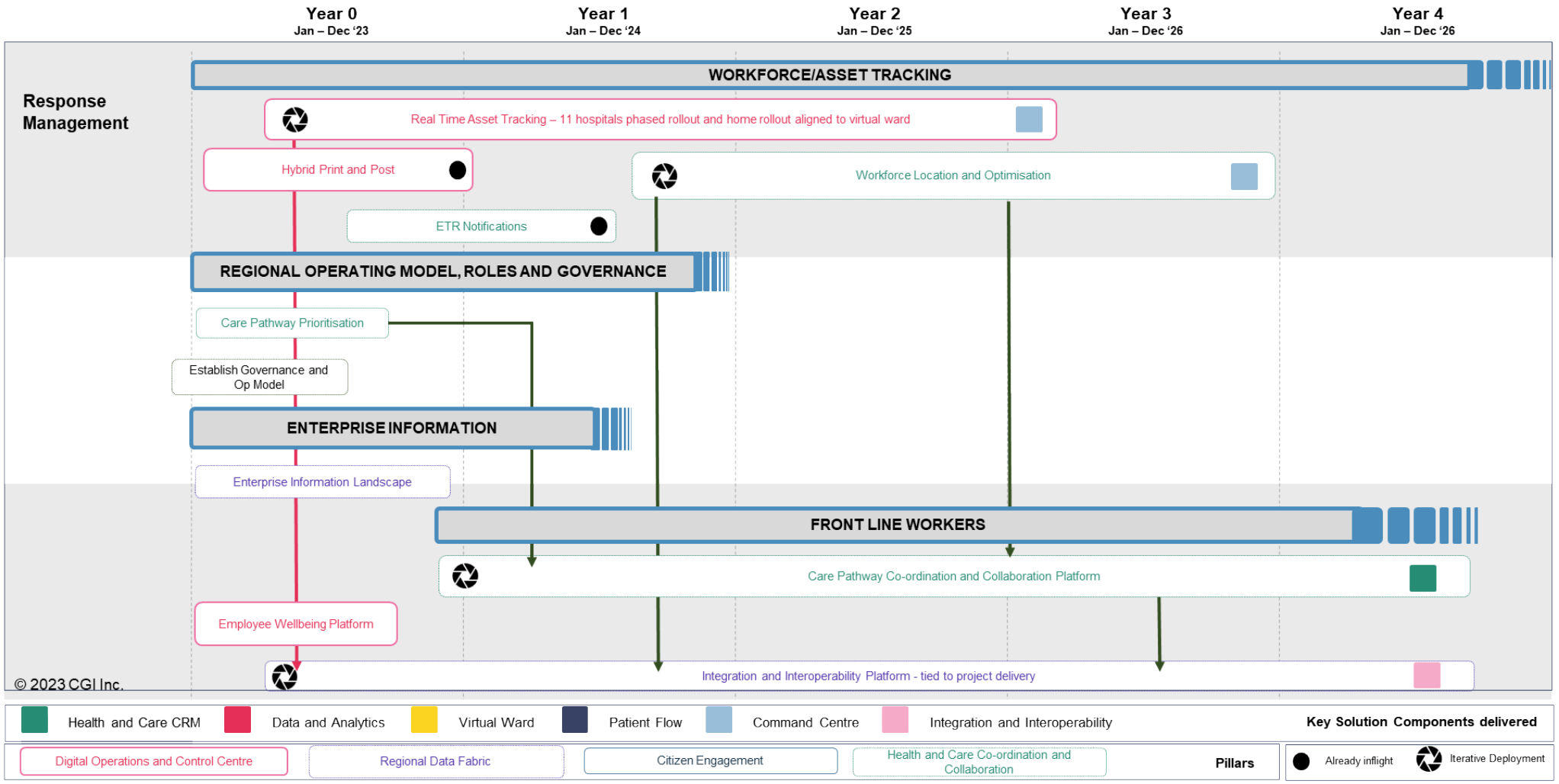
Digital roadmap



Digital roadmap



Digital roadmap



Appendix D – Financial Model

The below document includes the value propositions, high-level financial summary, and the return of investment.

High Probability of Delivery	Programme Lifecycle - Years									
	0	1	2	3	4	5	6	7	8	9
Indicative Cost per year	£7 445 669	£7 445 669	£7 445 669	£7 445 669	£7 445 669	£6 543 973	£6 543 973	£6 543 973	£6 543 973	£6 543 973
% of benefit realised	20 %	40 %	50 %	75 %	100 %	100 %	100 %	100 %	100 %	100 %
Savings per Annum	£3 492 054	£6 984 108	£8 730 135	£13 095 202	£17 460 269	£17 460 269	£17 460 269	£17 460 269	£17 460 269	£17 460 269
Net (+/-)	-£3 953 615	-£461 561	£1 284 466	£5 649 533	£10 014 600	£10 916 296	£10 916 296	£10 916 296	£10 916 296	£10 916 296
Cumulative	-£3 953 615	-£4 415 177	-£3 130 711	£2 518 822	£12 533 422	£23 449 718	£34 366 014	£45 282 310	£56 198 606	£67 114 902
Return on Investment	2 %									

Medium Probability of Delivery (Preferred)	Programme Lifecycle - Years									
	0	1	2	3	4	5	6	7	8	9
Indicative Cost per year	£7 445 669	£7 445 669	£7 445 669	£7 445 669	£7 445 669	£6 543 973	£6 543 973	£6 543 973	£6 543 973	£6 543 973
% of benefit realised	20 %	40 %	50 %	75 %	100 %	100 %	100 %	100 %	100 %	100 %
Savings per Annum	£5 312 657	£10 625 314	£13 281 643	£19 922 464	£26 563 285	£26 563 285	£26 563 285	£26 563 285	£26 563 285	£26 563 285
Net (+/-)	-£2 133 012	£3 179 645	£5 835 974	£12 476 795	£19 117 616	£20 019 312	£20 019 312	£20 019 312	£20 019 312	£20 019 312
Cumulative	-£2 133 012	£1 046 633	£6 882 607	£19 359 402	£38 477 018	£58 496 330	£78 515 642	£98 534 954	£118 554 266	£138 573 579
Return on Investment	107 %									

Low Probability of Delivery	Programme Lifecycle - Years									
	0	1	2	3	4	5	6	7	8	9
Indicative Cost per year	£7 445 669	£7 445 669	£7 445 669	£7 445 669	£7 445 669	£6 543 973	£6 543 973	£6 543 973	£6 543 973	£6 543 973
% of benefit realised	20 %	40 %	50 %	75 %	100 %	100 %	100 %	100 %	100 %	100 %
Savings per Annum	£7 132 442	£14 264 885	£17 831 106	£26 746 659	£35 662 212	£35 662 212	£35 662 212	£35 662 212	£35 662 212	£35 662 212
Net (+/-)	-£313 227	£6 819 216	£10 385 437	£19 300 990	£28 216 543	£29 118 239	£29 118 239	£29 118 239	£29 118 239	£29 118 239
Cumulative	-£313 227	£6 505 989	£16 891 426	£36 192 416	£64 408 959	£93 527 198	£122 645 437	£151 763 676	£180 881 915	£210 000 154
Return on Investment	213 %									

	Probability in Delivery		
	Low	Medium	High
Indicative Investment per 10 year	£76 492 183	£76 492 183	£76 492 183
Annual Savings from Year 5	£35 662 212	£26 563 285	£17 460 269
Pay Back Period	Year 1	Year 1-2	Year 2-3
Cumulative savings over the 10 year programme	£239 118 393	£158 592 891	£78 031 198
Return on Investment	213 %	107 %	2 %

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10
£6 543 973
100 %
£17 460 269
£10 916 296
£78 031 198

10
£6 543 973
100 %
£26 563 285
£20 019 312
£158 592 891

10
£6 543 973
100 %
£35 662 212
£29 118 239
£239 118 393

Imperative Number	Imperative Name
6	Joining the Dots
17	Operational Running
11	Optimise Where Care is Given
32	Easy to use Solutions
9	Service signposting
2	Common Priorities
30	Tech Enabled Operations
32	Easy to use Solutions
22	Citizen Outcomes Measures
14	New Ways of Working
16	Workforce Sustainability
30	Tech Enabled Operations
18	Demand. Supply & Configuration
29	Digitally enabled
24	Real-Time Medical Dashboard
12	Building Capabilities
25	Ecosystem Outcome Measurement
17	Operational Running
29	Digitally enabled
23	Information Hub
16	Workforce Sustainability
30	Tech Enabled Operations
16	Workforce Sustainability
11	Optimise Where Care is Given

30	Tech Enabled Operations

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Benefit Case	People Impact (L/M/H)	High Probablity of Delivery	Medium Probablity of Delivery
6A) Reduced repeat investigations due to single view of relevant patient information	Low	£2 180 984	£3 441 641
17B) Improved productivity of non-mobile nursing employees due to provision and use of modem digital tools	High	£3 739 973	£4 986 630
11B) Reduced number of hospital beds due to efficient patient discharge	Medium	£1 581 184	£2 107 776
32B) Reduced time spent using key tools for clinical staff due to better usability and adoption	High	£2 772 387	£4 158 581
9A) Reduced umbers of patients visiting due to effective Service Signposting	Medium	£675 700	£1 689 101
2A) Reduced duplicate regional transformation spend due to aligned organisational priorities	Low	£2 000 000	£2 500 000
30D) Reduced emergency ambulance demand due to call handling and management		£220 210	£440 421
32A) Reduced time spent using key tools for admin staff due to better usability and adoption	Low	£854 220	£1 281 329
22A) Reduced readmission cost due to improved first time resolution in	Low	£481 815	£1 202 670
14A) Reduced number Of home care visits due to aligned organisational processes	Medium	£470 000	£705 000
I6A) Reduced number of agency Staff due to enhanced employee retention	High	£1 060 202	£1 590 303
30B) Reduction in operational IT costs due to rationalising the digital estate	Low	£270 643	£451 071
18B) Reduced overtime costs due to more effective scheduling	Low	£493 333	£789 333
29B) Improved patient outcomes to (consultant—led post-first appointment)	Low	£632 239	£842 985
24A) Reduced referral costs due to effective use of real-time patient information	High	£127 400	£203 840
12A) Reduced financial liabilities due improved operational rigor	Low	£441 942	£662 913
25A) Reduced building to alignment and facility sharing across multiple organisations	Low	£353 080	£564 928
17A) Improved productivity of mobile workers due to provision and use of modem digital tools	Medium	£262 506	£328 132
29A) Improved patient outcomes to (consultant—led post-first appointment)	Low	£165 988	£207 486
23A) Reduced admin time and cost before starting operating theatre procedure due to effective patient information	Medium	£191 159	£191 159
16B) Reduce recruitment costs of full time employees enhanced employee retention	Low	£171 000	£255 000
30A) Reduced admin cost due to centralised call handling and management	Low	£85 500	£128 250
16B) Reduced employee onboarding costs due to employ retention	Low	£171 000	£255 000
11A) Reduced remote healthcare visits due to patient self-service	High	£29 920	£44 880

58/131

68/98

30C) Doctors time saved collating & writing up notes for inter-disciplinary transfer of care due to improved patient information	High	£27 885	£34 856
Total		**£17 460 269**	**£26 563 285**

Low Probablity of Delivery	RAG Delivery Status
£4 361 968	
£6 233 288	
£2 635 072	
£5 544 774	
£2 702 502	
£3 000 000	
£734 035	
£1 708 439	
£1 919 790	
£1 175 000	
£2 120 404	
£721 714	
£986 667	
£1 053 731	
£254 800	
£957 541	
£706 160	
£393 759	
£311 228	
£191 159	
£340 500	
£171 000	
£340 500	
£59 840	

E35 662 212	
E38 342	

6A) Reduced repeat investigations due to single view of relevant patient information			
Description	**Value**		
Type: Saving Opportunity	**High Probability of delivery**	**Medium Probability of delivery**	**Low Probability of delivery**
Number of diagnostic tests order per annum	350 856	350 856	350 856
Average cost of diagnostic tests	£97	£97	£97
Total cost per annum on diagnostic tests	£34 033 032	£34 033 032	£34 033 032
Impact of Technology: % reduction in the number of tests order due to visibility of all tests ordered	5 %	8 %	10 %
Total saving p.a.	**£1 701 652**	**£2 722 643**	**£3 403 303**

6A) Reduced repeat investigations due to single view of relevant patient information			
Description	**Value**		
Type: Saving Opportunity	**High Probability of delivery**	**Medium Probability of delivery**	**Low Probability of delivery**
Number of pathology tests order per annum	3 305 741	3 305 741	3 305 741
Average cost of pathology tests	£1,45	£1,45	£1,45
Total cost per annum on pathology tests	£4 793 324	£4 793 324	£4 793 324
Impact of Technology: % reduction in the number of tests order due to visibility of all tests ordered	10 %	15 %	20 %
Total saving p.a.	**£479 332**	**£718 999**	**£958 665**

12A) Reduced financial liabilities due improved operational rigor			
Description	**Value**		
Type: Saving Opportunity	**High Probability of delivery**	**Medium Probability of delivery**	**Low Probability of delivery**
Number of litigations claims (Medical Negligence & Personal Injury p.a.)	63	63	63
Average legal cost per litigation (defence and claimant costs)	73 657	73 657	73 657
Impact of Technology: % Reduction in the number of litigations claims due to improved compliance	10 %	15 %	20 %
Reduction in number of litigations per year	6	9	13
Total saving p.a.	**£464 039**	**£696 059**	**£928 078**

9A) Reduced numbers of patients visiting A&E due to effective service signposting			
Description	**Value**		
Type: Saving Opportunity	**High Probability of delivery**	**Medium Probability of delivery**	**Low Probability of delivery**
Number of A&E visits per year resulting in non-admittance to hospital	114 133	114 133	114 133
Average cost of A&E attendance for non admittance	£296	£296	£296
Impaction of Technology: % Reduction in the number of A&E attendance due to better signposting	2 %	5 %	8 %
Reduction in number of A&E visits per year	2 283	5 707	9 131
Total saving p.a.	**£675 700**	**£1 689 101**	**£2 702 502**

11A) Reduced remote healthcare visits due to patient self-service			
Description	**Value**		
Type: Saving Opportunity	**High Probability of delivery**	**Medium Probability of delivery**	**Low Probability of delivery**
Number of remote patient visits to take readings (p.a.)	7 479	7 479	7 479
Cost per remote visit to take reading	£20	£20	£20
Impact of Technology: % Reduction in number of remote visits to take readings due to patient self-service	20 %	30 %	40 %
Reduction in number of remote visits to take readings (p.a.)	1 496	2 244	2 992

Total saving p.a.	**£29 920**	**£44 880**	**£59 840**
11B) Reduced number of hospital beds due to efficient patient discharge			
Description	**Value**		
Type: Saving Opportunity	**High Probability of delivery**	**Medium Probability of delivery**	**Low Probability of delivery**
Number of bed days lost due to a discharge delay	14 970	14 970	14 970
Average cost of hospital bed day	£704	£704	£704
Impact of Technology: % Reduction in number of bed days lost by reducing delayed discharge through more effective patient record management	15 %	20 %	25 %
Reduction in number of bed days lost due to a discharge delay	2 246	2 994	3 743
Total saving p.a.	**£1 581 184**	**£2 107 776**	**£2 635 072**
12A) Reduced financial liabilities due improved operational rigor			
Description	**Value**		
Type: Saving Opportunity	**High Probability of delivery**	**Medium Probability of delivery**	**Low Probability of delivery**
Number of litigations claims (Medical Negligence & Personal Injury p.a.)	63	63	63
Average legal cost per litigation (defence and claimant costs)	£73 657	£73 657	£73 657
Impact of Technology: % Reduction in the number of litigations claims due to improved compliance	10 %	15 %	20 %
Reduction in number of litigations per year	6	9	13
Total saving p.a.	**£441 942**	**£662 913**	**£957 541**
14A) Reduced number of home care visits due to aligned organisational processes			
Description	**Value**		
Type: Saving Opportunity	**High Probability of delivery**	**Medium Probability of delivery**	**Low Probability of delivery**
Total Number of home visits (p.a.)	500 000	500 000	500 000
Assumed % of visits with overlapping services	5 %	5 %	5 %
Estimated number of visits with overlapping services (p.a.)	25 000	25 000	25 000
Impact of Technology: % Reduction in number of visits required through more effective collaboration	2 %	3 %	5 %
Reduction in number of visits (p.a.)	10 000	15 000	25 000
Average cost of home visit	£47	£47	£47
Total saving p.a.	**£470 000**	**£705 000**	**£1 175 000**
16A) Reduced number of agency staff due to enhanced employee retention			
Description	**Value**		
Type: Saving Opportunity	**High Probability of delivery**	**Medium Probability of delivery**	**Low Probability of delivery**
Number of agency staff	337	337	337
Average work days per agency staff (p.a.)	220	220	220
Number of days worked by agency staff per annum	74 140	74 140	74 140
Impact of Technology: % Reduction in number of days worked by agency staff due to enhanced FTE retention and improv ed scheduling	10 %	15 %	20 %
Weighted average cost of agency staff per day	£317	£317	£317
Weighted average daily cost per employee ('Medical & Dental' and 'Nursing and Midwifery') per day	£174	£174	£174
Savings for reducing agency staff time	£143	£143	£143
Total saving p.a.	**£1 060 202**	**£1 590 303**	**£2 120 404**
16B) Reduced recruitment costs of full time employees due to enhanced employee retention			
Description	**Value**		

Type: Saving Opportunity	High Probability of delivery	Medium Probability of delivery	Low Probability of delivery
Turnover rate	10 %	10 %	10 %
Total Number of Employees	11 355	11 355	11 355
Total number of new hires required	1 136	1 136	1 136
Average cost of recruitment	£1 500	£1 500	£1 500
Impact of Technology: % Reduction in turnover rate due to improved satisfaction enabled by digital working	10 %	15 %	20 %
Reduction in number of new hires required	114	170	227
Total saving p.a.	**£171 000**	**£255 000**	**£340 500**
16C) Reduced employee onboarding costs due to enhanced employee retention			
Description	**Value**		

Type: Saving Opportunity	High Probability of delivery	Medium Probability of delivery	Low Probability of delivery
Turnover rate	10 %	10 %	10 %
Total Number of Employees	11 355	11 355	11 355
Total number of new hires required	1 136	1 136	1 136
Admin cost to onboard	£643	£643	£643
Impact of Technology: % Reduction in turnover rate due to improved satisfaction enabled by digital working	10 %	15 %	20 %
Reduction in number of new hires required	114	170	227
Total saving p.a.	**£73 302**	**£109 310**	**£145 961**
17A) Improved productivity of mobile workers due to provision and use of modern digital tools			
Description	**Value**		

Type: Saving Opportunity	High Probability of delivery	Medium Probability of delivery	Low Probability of delivery
Number of remote patient visits for medical assessment	114 133	114 133	114 133
Hourly cost of mobile workers	£23	£23	£23
Admin time of mobile workers transcribing paper notes into systems per visit	15	15	15
Impact of Technology: % Reduction in time transcribing paper notes into system enabled by providing mobile workers with the right tools	40 %	50 %	60 %
Reduction in admin time transcribing paper notes into system per annum (hours)	11 413	14 267	17 120
Total saving p.a.	**£262 506**	**£328 132**	**£393 759**
17B) Improved productivity of non-mobile nursing employees due to provision and use of modern digital tools			
Description	**Value**		

Type: Saving Opportunity	High Probability of delivery	Medium Probability of delivery	Low Probability of delivery
Number of in hospital nursing staff	1 971	1 971	1 971
Average conducting admirative duties hours per day	2,5	2,5	2,5
Total nursing time spent conducting admirative duties per annum	1 084 050	1 084 050	1 084 050
Impact of Technology: % Reduction in nurse time spent making notes enabled by providing right tools	15 %	20 %	25 %
Reduction in nursing time spent making notes per annum (Hours)	162 608	216 810	271 013
Average weighted cost of nursing staff per hour	£23	£23	£23
Total saving p.a.	**£3 739 973**	**£4 986 630**	**£6 233 288**
18B) Reduced overtime costs due to more effective scheduling			
Description	**Value**		

Type: Saving Opportunity	High Probability of delivery	Medium Probability of delivery	Low Probability of delivery
Average total overtime spend (p.a.)	£7 400 000	£7 400 000	£7 400 000
Average overtime rate (per hour)	£36	£36	£36
Estimated hours of overtime (p.a.	205 556	205 556	205 556
Impact of Technology: % Reduction in overtime due to more effective scheduling	5 %	8 %	10 %
Reduction in overtime due to more effective scheduling	10 278	16 444	20 556
Extra Overtime Pay	£12	£12	£12
Total saving p.a.	**£493 333**	**£789 333**	**£986 667**
22A) Reduced readmission cost due to improved first time resolution in secondary settings			
Description	**Value**		
Type: Saving Opportunity	**High Probability of delivery**	**Medium Probability of delivery**	**Low Probability of delivery**
Number of patients returning to hospital w ithin 1 week per annum	6 431	6 431	6 431
Average cost of admission in secondary care setting	£3 735	£3 735	£3 735
Impact of Technology: % Reduction in number of patients readmitted to hospital within 1 week enabled by single view of patient	2 %	5 %	8 %
Reduction in number of patient readmissions to hospital within 1 week	129	322	514
Total saving p.a.	**£481 815**	**£1 202 670**	**£1 919 790**
23A) Reduced admin time and cost before starting operating theatre procedure due to effective patient information			
Description	**Value**		
Type: Saving Opportunity	**High Probability of delivery**	**Medium Probability of delivery**	**Low Probability of delivery**
Number of clerical and admin working in surgery care group FTEs	26,9	26,9	26,9
Average amount of time per day sourcing patient records (hours) per day	2	2	2
Number of working days per clerical and admin staff	220	220	220
Total time spend sourcing patient records per year (hours)	11 836	11 836	11 836
Impact of Technology: % Reduction in time sourcing patient records enabled by single view of patient	15 %	20 %	30 %
Reduction in time spent sourcing patient records per year (hours)	1 775	2 367	3 551
Average loaded salary of clerical and admin staff	£19	£19	£19
Total saving p.a.	**£191 159**	**£191 159**	**£191 159**
24A) Reduced referral costs due to effective use of real-time patient information			
Description	**Value**		
Type: Saving Opportunity	**High Probability of delivery**	**Medium Probability of delivery**	**Low Probability of delivery**
Number of referrals to wrong specialist due to insufficient information	7 000	7 000	7 000
Impact of Technology: % Reduction in number of referrals to wrong place enabled by single view of patient	5 %	8 %	10 %
Reduction in number of referrals to wrong place	350	560	700
Average cost of face to face appointment (First consultant led)	£364	£364	£364
Total saving p.a.	**£127 400**	**£203 840**	**£254 800**
25A) Reduced building costs due to alignment of services and facility sharing across multiple organisations			
Description	**Value**		
Type: Saving Opportunity	**High Probability of delivery**	**Medium Probability of delivery**	**Low Probability of delivery**

Cost of physical infrastructure (Estates & Property)	£35 308 000	£35 308 000	£35 308 000
% Under-utilisation of physical infrastructure (Estates & Property)	20 %	20 %	20 %
Spend on Under-utilisation of physical infrastructure (Estates & Property)	£7 061 600	£7 061 600	£7 061 600
Impact of Technology: % Reduction in operating cost of physical infrastructure due to insight based utilisation optimisation	5 %	8 %	10 %
Total saving p.a.	**£353 080**	**£564 928**	**£706 160**
29A) Improved patient outcomes due to digital consultations (consultant-led first appointment)			
Description	**Value**		
Type: Saving Opportunity	**High Probability of delivery**	**Medium Probability of delivery**	**Low Probability of delivery**
Existing number of annual face to face appointments (First Consultant Led)	74 102	74 102	74 102
Impact of Technology: % Shift to virtual consultation enabled by digitally enabled w working practices	8 %	10 %	15 %
Number of consultations shifted from face-to-face to virtual	5 928	7 410	11 115
Average cost of face to face appointment (First consultant led)	£364	£364	£364
Average cost of virtual consultation (First consultant led)	£335	£335	£335
Cost saving of virtual consultation	£28	£28	£28
Total saving p.a.	**£165 988**	**£207 486**	**£311 228**
29B) Improved patient outcomes due to digital consultations (consultant-led post-first appointment)			
Description	**Value**		
Type: Saving Opportunity	**High Probability of delivery**	**Medium Probability of delivery**	**Low Probability of delivery**
Existing number of annual face to face appointments (Follow-up Consultant Led)	150 533	150 533	150 533
Impact of Technology: % Shift to virtual consultation enabled by digitally enabled working practices	15 %	20 %	25 %
Number of consultations shifted from face-to-face to virtual	22 580	30 107	37 633
Average cost of face to face appointment (Follow-up consultant led)	£257	£257	£257
Average cost of virtual consultation (Follow-up consultant led)	£229	£229	£229
Cost saving of virtual consultation	£28	£28	£28
Total saving p.a.	**£632 239**	**£842 985**	**£1 053 731**
30A) Reduced admin cost due to centralised call handling and management			
Description	**Value**		
Type: Saving Opportunity	**High Probability of delivery**	**Medium Probability of delivery**	**Low Probability of delivery**
Number of incoming calls per annum by service	1 800 000	1 800 000	1 800 000
Average time to handle incoming call by service (minutes)	1,5	1,5	1,5
Average cost per hour of call handler	£19	£19	£19
Impact of Technology: % Reduction in incoming calls duration due centralised handling and management	10 %	15 %	20 %
Total reduction in incoming calls duration per annum (hours)	4 500	6 750	9 000
Total saving p.a.	**£85 500**	**£128 250**	**£171 000**
30B) Reduction in operational IT costs due to rationalising IT estate			
Description	**Value**		
Type: Saving Opportunity	**High Probability of delivery**	**Medium Probability of delivery**	**Low Probability of delivery**
Computer Hardware Purchases	£1 396 199	£1 396 199	£1 396 199
Computer Software/License Fees	£3 476 810	£3 476 810	£3 476 810
Computer Network Costs	£222 129	£222 129	£222 129

Computer Maintenance	£947 016	£947 016	£947 016
IT Security Costs	£4 940	£4 940	£4 940
External Data Contracts	£7 573	£7 573	£7 573
FM Computer Contracts	£2 002 239	£2 002 239	£2 002 239
GMS IT/Computer Purchases Hardware	£964 513	£964 513	£964 513
Impact of Technology: % Reduction in IT spend across the organisation	3 %	5 %	8 %
Total saving p.a.	**£270 643**	**£451 071**	**£721 714**
30C) Doctor's time saved collating & writing up notes for inter-disciplinary transfer of care due to improved patient information			
Description	**Value**		
Type: Saving Opportunity	**High Probability of delivery**	**Medium Probability of delivery**	**Low Probability of delivery**
Average time taken to collate and write up clinical notes for inter disciplinary transfer of care by the leading Doctor (minutes per case)	25	25	25
Total number of clinical notes written up per year w within HD UHB for inter disciplinary transfer of care	5 577	5 577	5 577
Total time spent writing up referrals per year (hours)	2 324	2 324	2 324
Impact of Technology: % Reduction in time spent writing up patient notes for transfer of care enabled by single view of patient	40 %	50 %	55 %
Total reduction in time spent writing referrals per year	930	1 162	1 278
Average hourly cost of referrer	£30	£30	£30
Total saving p.a.	**£27 885**	**£34 856**	**£38 342**
30D) Reduced emergency ambulance demand due to improved call handling and management			
Description	**Value**		
Type: Saving Opportunity	**High Probability of delivery**	**Medium Probability of delivery**	**Low Probability of delivery**
Average cost of an ambulance call out	£247	£247	£247
Number of ambulance call outs per annum	59 436	59 436	59 436
Impact of Technology: % Reduction in ambulance call outs due to call management informed by enhanced information triage	1,5%	3 %	5 %
Reduction in number of ambulance call outs	892	1 783	2 972
Total saving p.a.	**£220 210**	**£440 421**	**£734 035**
32B) Reduced time spent using key tools for clinical staff due to better usability and adoption			
Description	**Value**		
Type: Saving Opportunity	**High Probability of delivery**	**Medium Probability of delivery**	**Low Probability of delivery**
Number of FTEs (clinical) staff	3 485	3 485	3 485
Average time spent on logging into your system/ seeking to access information (s) for clinical staff (m ins per day)	30	30	30
Time spent on logging into your system/ seeking to access information for clinical staff per year	383 350	383 350	383 350
Impact of Technology:% Reduction in time spent logging into systems/ seeking information due to improved digital tools	20 %	30 %	40 %
Reduction in time spent logging into systems/ seeking information	76 670	115 005	153 340
Average loaded cost of clinical staff (£Jhr)	£36,16	£36,16	£36,16
Total saving p.a.	**£2 772 387**	**£4 158 581**	**£5 544 774**
32A) Reduced time spent using key tools for admin staff due to better usability and adoption			
Description	**Value**		
Type: Saving Opportunity	**High Probability of delivery**	**Medium Probability of delivery**	**Low Probability of delivery**
Number of FTEs (admin) staff	2 016	2 016	2 016
Average time spent on logging into your system / seeking to access information(s) for admin staff (mins per day)	30	30	30

Time spent on logging into your system/ seeking to access information for admin staff per year	221 760	221 760	221 760
Impact of Technology:% Reduction in time spent logging into systems / seeking information due to improved digital tools	20 %	30 %	40 %
Reduction in time spent logging into systems / seeking information	44 352	66 528	88 704
Average loaded cost of clinical staff (£Jhr)	£19,26	£19,26	£19,26
Total saving p.a.	**£854 220**	**£1 281 329**	**£1 708 439**
2A) Reduced duplicate regional transformation spend due to aligned organisational priorities			
Description	**Value**		
Type: Saving Opportunity	**High Probability of delivery**	**Medium Probability of delivery**	**Low Probability of delivery**
Transformation Spend across health and care organisations (p.a.)	£20 000 000	£20 000 000	£20 000 000
Number of transformation projects (p.a.)	80	80	80
Average spend on transformation projects	250 000	250 000	250 000
Estimated duplication of transformation focus areas	20 %	20 %	20 %
Impact of technology:% reduction in the amount of duplication in focus areas through analysis of spend areas across region	50 %	63 %	75 %
Total saving p.a	**£2 000 000**	**£2 500 000**	**£3 000 000**

Appendix E – Example of Charter approach

Employee Engagement

Organisation Need (Objective)

Attract and enable employees with modern easy to use technology to support onboarding, learning and operational running

Programme Overview (Background)

Provide technology solutions which enable employees in their day-to-day roles and support ongoing career performance, development and retention

Programme Outline (Proposal)

Identify key employee categories for inclusion in phase one of the project
- Assess and benchmark current engagement levels e.g., key attraction and retention engagement focus areas
- Identify future potential benefits/outcomes e.g., impact on recruitment and retention of employees
- Generate change enablement analysis e.g., vision, communications, participation and readiness

Define solution options (people, process & technology)
- Generate solution blueprint e.g., people engagement strategy
- Create Return on Investment analysis e.g., attraction and retention
- Define implementation plan e.g., market campaign and in-house solution approach

Implement and run solution (people, process & technology)
- Create project/programme governance e.g., identify key participants (users, owners and suppliers)
- Mobilise implementation team, project delivery & measure impact

Target Outcomes

- Attract the right employees to **join and grow careers** at Hywel Dda UHB
- Improved employee **engagement, satisfaction and wellbeing**
- More **efficient operational running**
- Improved **citizen and patient experience** and outcomes
- **Reduced operating costs** due to easy-to-use solutions

Solution Capabilities

My Client Shared Care Record	My Cases	My Wellbeing
My Schedule	My Alerts and Notification	My Schedule
Shared Care Record	Workflow and Orchestration	Scheduling

Related Imperatives

16	17	32
'Workforce Sustainability'	'Operational Running'	'Easy to Use Solutions'

Technology Pillars

- **Health & Care Co-ordination & Collaboration**
- Citizen Engagement
- Regional Data Fabric
- Digital Operations and Control Centre

Solution Components

My Wellbeing App | Health and Care CRM | Integration & Interoperability Platform

Employee ID and Authentication | Data and Analytics

Change Adoption

Lower levels of support for change adoption are anticipated across:
- Vision
- Communication
- Participation
- Readiness

Supporting target outcomes.

Financial Summary*

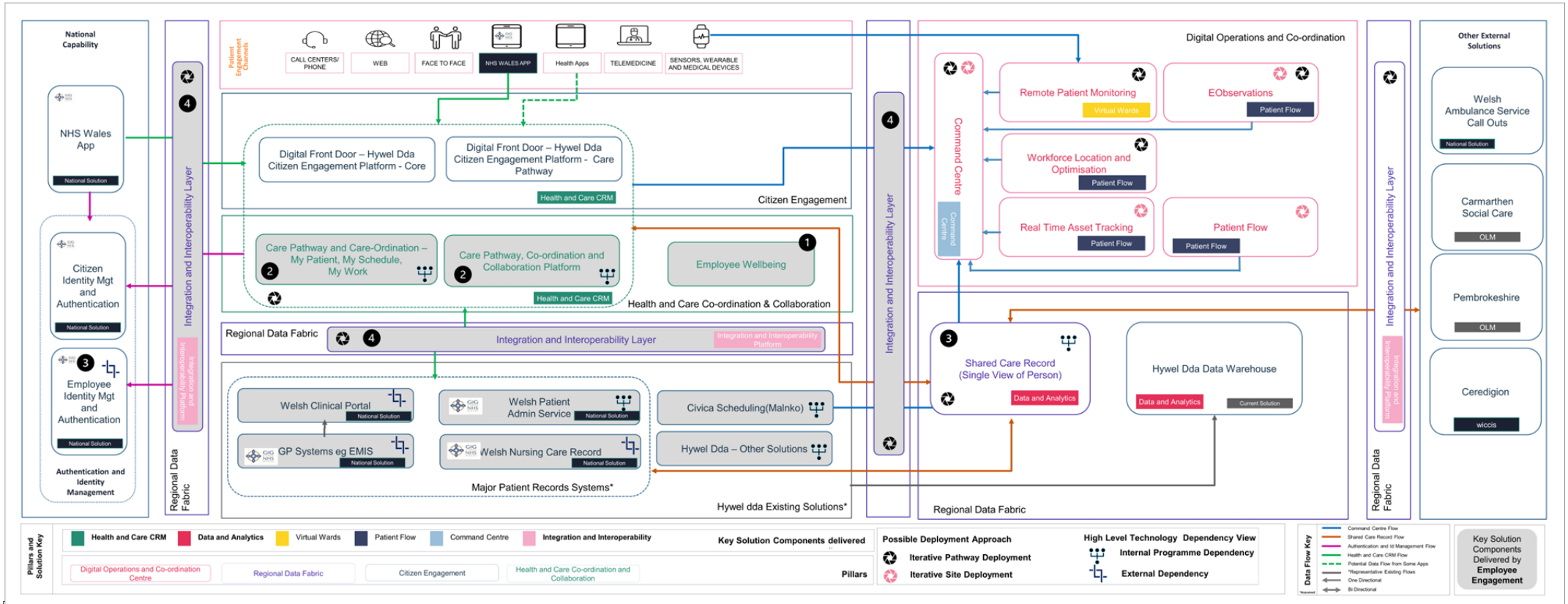
- Benefit value ROM: £2,173,000 – £4,346,000 p.a.
- Solution ROM: £2,667,264

Key Dependencies

- Access to key data across the ecosystem
- Front Line Workers
- Single Citizen/Patient View

Example of Proposed Architecture Journey:

Employee engagement – architecture journey



1 Establish **real time employee experience platform** to listen to what's important to your employees and get meaningful insights to improve the way you work together.

2 **Establish by pathway digital health (and care) co-ordination and collaboration platform**. Improving colleague experience by

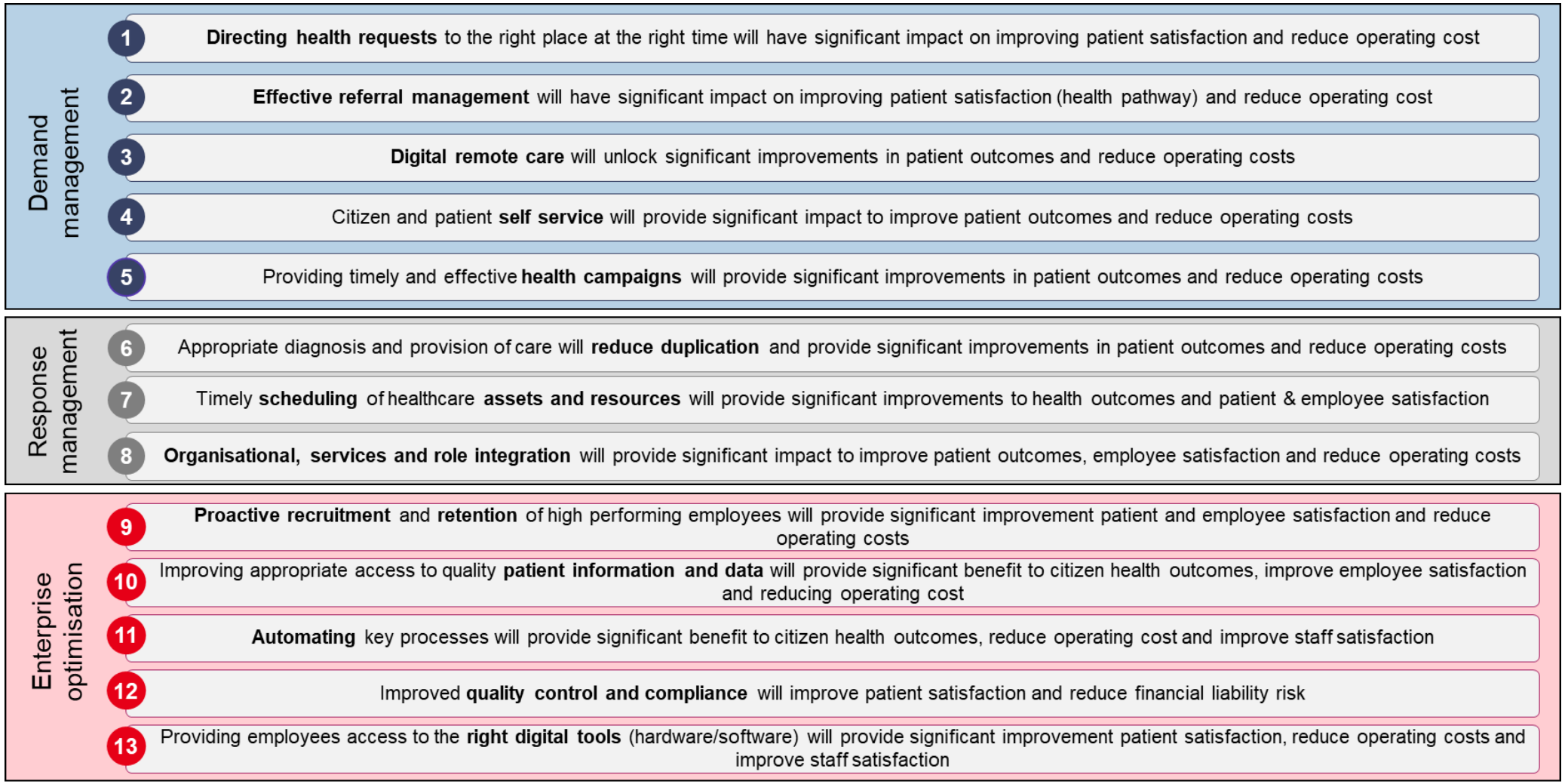
- Surfacing a single view of a patient into a core platform
- Facilitating digital collaboration across the health board through by orchestrating work and integrating with core solutions

3 **Dependencies** on

- Shared Care Record
- Employee Identity and Access Management: External
- National Systems integration

4 Likely to **require bi-directional integration** Into core systems and Shared Care Record.

Appendix F – Value hypothesis



DIOGEL | CYNALIADWY | HYGYRCH | CAREDIG
SAFE | SUSTAINABLE | ACCESSIBLE | KIND

GIG CYMRU NHS WALES
Bwrdd Iechyd Prifysgol
Hywel Dda
University Health Board

A Healthier Mid & West Wales - Programme Business Case (PBC)

Enabling Transformation th[illegible]ugh D[illegible]tal

Key Points and Facts

Purpose of the PBC

- To sets out the digital proposition to realise the vision we articulated in our Health and Care Strategy A Healthier Mid and West Wales: Our Future Generations Living Well and create an integrated, patient centric, community based and social model of care.
- To sets out the Programme Business Case (PBC) for the investment in the Digital Enablement Plan for Hywel Dda University Health Board (HDdUHB). The purpose of this business case is to articulate the strategic rationale for the programme, outline its scope and breadth, and provide an indication of the likely benefits and costs associated with delivery.
- To seek Board endorsement for the PBC, and agree to test the market place, following the release of the Prior Information Notice (PIN), for a strategic partner to progress the digital enablement plan
- Following approval of this PBC, our focus will move to Outline Business Case stage, where we will further develop the Economic, Financial and Commercial Cases based on results of the market testing focussed around the specification requirements

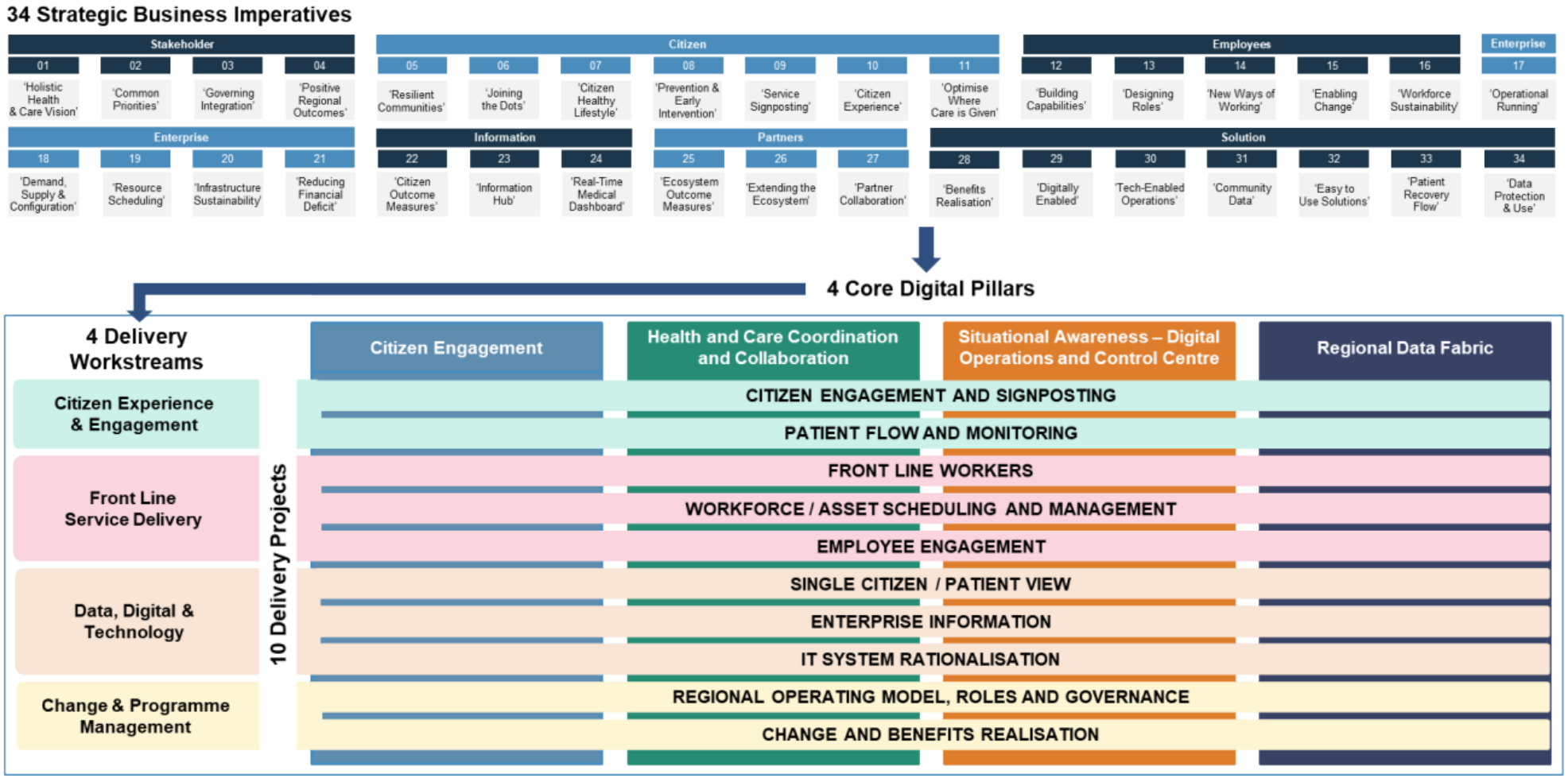
DIOGEL | CYNALIADWY | HYGYRCH | CAREDIG
SAFE | SUSTAINABLE | ACCESSIBLE | KIND

GIG CYMRU NHS WALES
Bwrdd Iechyd Prifysgol Hywel Dda University Health Board

Key Points and

Programme delivery

- Based around the already agreed 34 business imperatives, and 4 core digital pillars, 4 delivery workstreams, and 10 delivery projects have been designed that will over the next 3-5 years provide the digital transformation activities, within a



Key Points and Facts

Programme delivery

- The options to deliver the intended objectives of the Digital Enablement Plan are as follows:
- The preferred option would be to enter into a long-term strategic partnership (Option 3) with a supplier to enable us to plan, access and manage the capacity necessary to

	Option 0 *Do nothing*	Option 1 **Look to appoint additional resources into the digital team to accelerate delivery**	Option 2 **Appoint (when required) additional support from agencies to bolster the digital team**	Option 3 **Appoint a strategic digital transformation partner**
Description	Do Nothing – Continue with a current transformation approach within the Health Board, which is reactive and lacks pace of delivery.	Appoint additional workforce to increase the number of projects that the digital team are able to rollout	Based on the specific programmes of work look to appoint agency staff to work alongside the current workforce to deliver	Procure a strategic digital partner, who will provide capacity and capability that will be able to scale up quickly to allow rapid transformation alongside the current digital team(s)

- The partnership will do this by fully leveraging the capacity and expertise that exists, both within the Health Board and with a strategic partner, significantly accelerating the pace of delivery of our Digital Response and digital priorities

Key Points and Facts

Digital Strategic Partner

- Our digital ambitions currently outweigh our capacity and capability to deliver with most transformation activity dependent on ad-hoc and/or one-off funding sources providing difficulties in recruiting permanent staff.

- A longer-term arrangement with a strategic partner will enable us to plan and manage our external support more efficiently and bring wider benefits in terms of skill and knowledge transfer (in both directions) and career development opportunities. We expect the partnership to work in an integrated way with our internal teams, maximising and leveraging both the partnership and internal Health Board knowledge and expertise.

- The partner would have easier and quicker access to 'up-to-date' skills, knowledge and experience and have better/more awareness of the latest digital innovations and access to people who do horizon scanning, ultimately ensuring the Health Board can remain well informed about the fast-moving, specialised digital markets without needing to directly employ these skills

Key Points and Facts

Summary:

- To enable improved citizen, patient and employee experience and unlock value, Hywel Dda's digital enablement roadmap sets out **10 key programmes of work**, positioned across the **four delivery areas** of Citizen Experience & Engagement, Front Line Service Delivery, Data, Digital and Technology and Change and Programme Management. This has the potential to unlock c. **£17m to £35m** per annum of value.
- The Hywel Dda UHB digital enablement roadmap, set across a period of five years, shows an initial view of programme phasing
- Delivering our target solution state, informed by our programme charters, will allow us to incrementally unlock benefit over the next 5 years using iterative delivery methods.
- Core areas of digital investment should be aligned to the following areas within the first 1-3 years:
    - Health and Care CRM supporting **citizen engagement and health and care co-ordination and collaboration**
    - Data, analytics and integration building the foundation of a **regional data fabric** through single view of a person and improving the flow of data between systems

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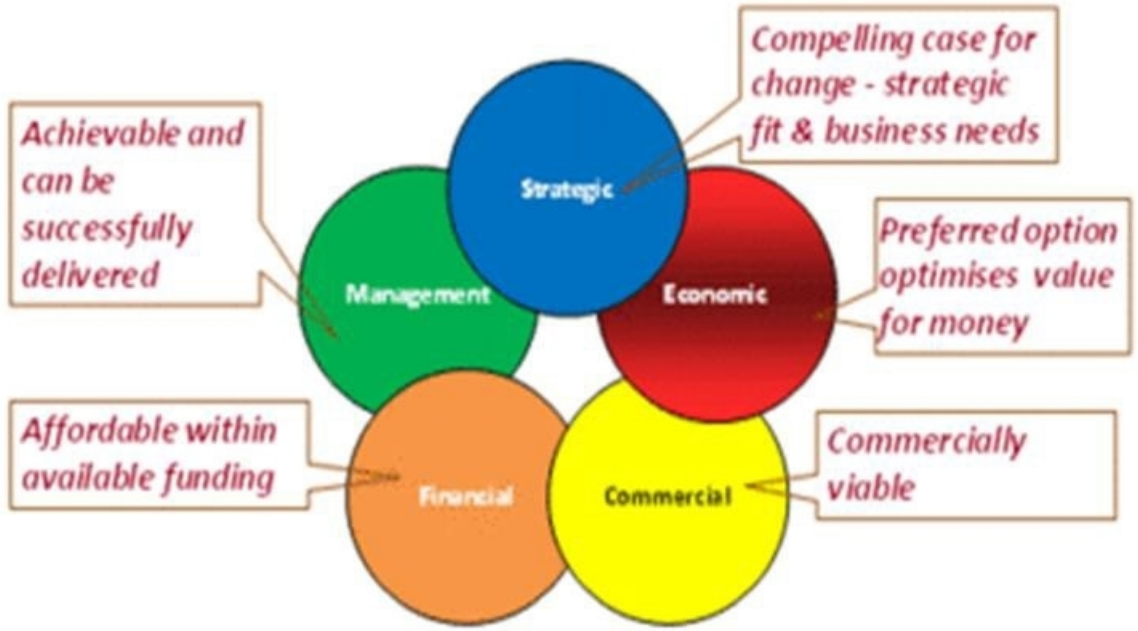
Summary of the 5 Case Model

Structure of the PBC - 5 Case Model

- A PBC provides an initial stage strategic context for progression of a programme where subsequent business cases can be developed.

- The PBC follows the better business case approach following the five case business model

1. Economic Case
2. Strategic Case
3. Management Case
4. Commercial Case
5. Financial Case



- A robust 'case for change' is key. The PBC must set out the imperative for investment in support of transformation enabled by digital in line with our Health and Care Strategy

- Total investment with is estimated to be circa £75m, over a 10 year period, with a savings ranging from £17m-£35m annually. It is **not** anticipated the introduction of the digital enablement plan will provide significant cashable benefits, but will provide a reduction in "waste", providing areas for reinvestment to further streamline and improve service provision.

Purpose of PBC – Strategic Case

Strategic Case

To make the case for change and to demonstrate how the programme provides strategic drivers for change

- The Strategic case is based on the A Healthier Mid and West Wales: Our Future Generations Living Well
- Key drivers for change being called out are:
  - A Healthier Wales
  - The Value Based Health Care Programme
  - The Once for Wales Approach
  - A Digital Strategy for Health and Social Care in Wales
  - The Health Boards Digital Response and Digital Operational Plan

- Programme Investment Objectives have been aligned to the 34 business imperatives and 4 core digital pillars, 4 delivery workstreams, and 10 delivery projects.

- This case also calls out the high level programme risks, benefits, constraints and dependencies.

Purpose of PBC – Strategic Case

Strategic Case

Key Drivers for Transformation Enabled by Digital

HDdUHB is facing several key challenges:

- There is a shortage of skilled health and social care staff
- An increase in demand for healthcare services and concurrently cost is being driven by a large and growing ageing population,
- A lack of knowledge, training and system problems has resulted in a low uptake of digital solutions to-date;
- There is no single, shared patient record;
- HDdUHB remains largely paper based and as a result information is duplicated, kept in silos and there is a lack of real-time data;
- It remains challenging to ensure service delivery across a rural geography, with services having to cover large areas, and a lack of mobile phone signal in some rural areas; and
- Inability for digital solutions to respond to changing patient and citizen needs;
- System complexity with multiple transformation programmes, increasing number

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Purpose of PBC – Strategic Case

Strategic Case

Strategic Benefits to Change

Hywel Dda Strategic Benefits	Examples of types of outcomes and benefits
Patient safety increased	Increased timeliness and availability of relevant clinical information decreased transcription errors and decreases risk to patients' safety
Positive patient outcomes increased	Easy access increases speed and of diagnosis, care, treatment plan and onward referral
Patient confidence increased	The availability and targeting of accurate and relevant information at the point of contact
Legal compliance maintained	Requirement to comply with policy, legislation, and standards
Healthcare system efficiency increased	Processes are faster, or wasteful processes can be decreased or eliminated
Overall healthcare system costs decreased	Information management and technology improvements eliminate wasteful processes and reduce expenditure
Digital Inclusion	Identifying digitally excluded patients / citizens and providing access to devices and digital skills to enable all across

Digital technology and data to be used appropriately and innovatively to help plan and improve services and ultimately improve outcomes for all.

Through the digital ambition set out in the health and care strategy the strategic benefits illustrated in the following table will be enabled

Purpose of PBC – Economic Case

Economic Case

This section summarises the value for money assessment of the short-listed options, including an appraisal of the benefits, risks and associated costs

- The Economic case calls out the options for the delivery of the Programme
- The contract length is anticipated to be 10 years. The maximum contract value will be no more than £75m over the total 10-year contract period, although with no obligation to spend any of this.
- The maximum contract value has been estimated based on the following components and associated funding assumptions:
  - The lessons learned from previous digital transformation projects.
  - Estimated costs for the upcoming Digital Transformation Programme, such as Electronic Prescribing and Medicines Administration (EPMA), Patient Flow / e-observations, Welsh Intensive Care System (WICS), replacement of Laboratory Information Management System (LIMS), and Radiology systems.
  - Average spend on digital change.

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Purpose of PBC – Economic Case

Economic Case

- For the strategic ('non-monetary') appraisal, the following strategic assessment criteria were utilised:
  - Strategic Alignment
  - Staff, care pathways, and operational efficiency
  - Health intelligence
  - Digital maturity
  - Citizen engagement
  - Frontline service delivery
  - Digital, data, and technology
  - Change and Programme Management

Purpose of PBC – Economic Case

Economic Case

- For the strategic benefits, the following were utilised:
  - Increased efficiencies
  - Organisational
  - Patient experience
  - Patient outcomes
  - Staff experience

- Any quantitative savings will likely be the result of reduction in administrative activities, increased clinical capacity through more efficient processes and ultimately better outcomes for patients

- While monetary savings are not explicitly included in the economic or financial appraisal elements of this business case, the equivalent monetary value of non-cash efficiency savings has been provided as an additional indicator of the impact

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Purpose of PBC – Economic Case

Economic Case

- A high-level assessment of the benefits and risks has been developed with potential mitigations. However, for the Outline Business Case it is anticipated that these will be tested with the current digital enablement group, and wider stakeholders.
- The strategic risks, have been classified as follows:
  - Change Management (Staff adoption, Training, Programme Ownership)
  - Funding (Implementation, Rollout, Ongoing, Integration)
  - Implementation (Staff Resourcing, Capacity, Service Disruption, Dual Running, Supplier Delay / Delivery, Programme Complexity)
  - Digital Infrastructure (Network, Devices, Cyber, Business and Usual)
  - Interoperability (National and Local Systems)

Purpose of PBC – 5 Cases

Commercial Case

The Commercial Case outlines the proposed procurement in relation to the digital enablement plan. It considers a range of procurement elements required to deliver solutions, including scope, procurement procedure, approach and timetable.

- A detailed specification for a strategic partner has been developed in collaboration with stakeholders
- Hywel Dda will need to ensure that as part of the digital enablement plane that any supplier, working with the Health Board will provide any or all of the skills and capabilities set out in this section over the lifetime of the partnership arrangement.
- This will enhance and compliment the current capability within HDdUHB to ensure a resilient delivery model.
- Due to the large complex systems that will be required to be commissioned a single partner / provider will be sought
- Commercial Risks:
  - Lack of Clarity of requirements
  - Influence of new priorities at a national and local level could effect the programme
  - Funding constraints making the commercial strategy not deliverable

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Purpose of PBC – 5 Cases

Commercial Case

- Risk Transfer - The governing principle is that risks should be allocated to the party best able to manage it, subject to the relative cost. The following risk transfer matrix details how the types of risk are to be apportioned between the Health Board and the preferred supplier.

- Given the complexities of the programme, each work package will be assessed on its merits and

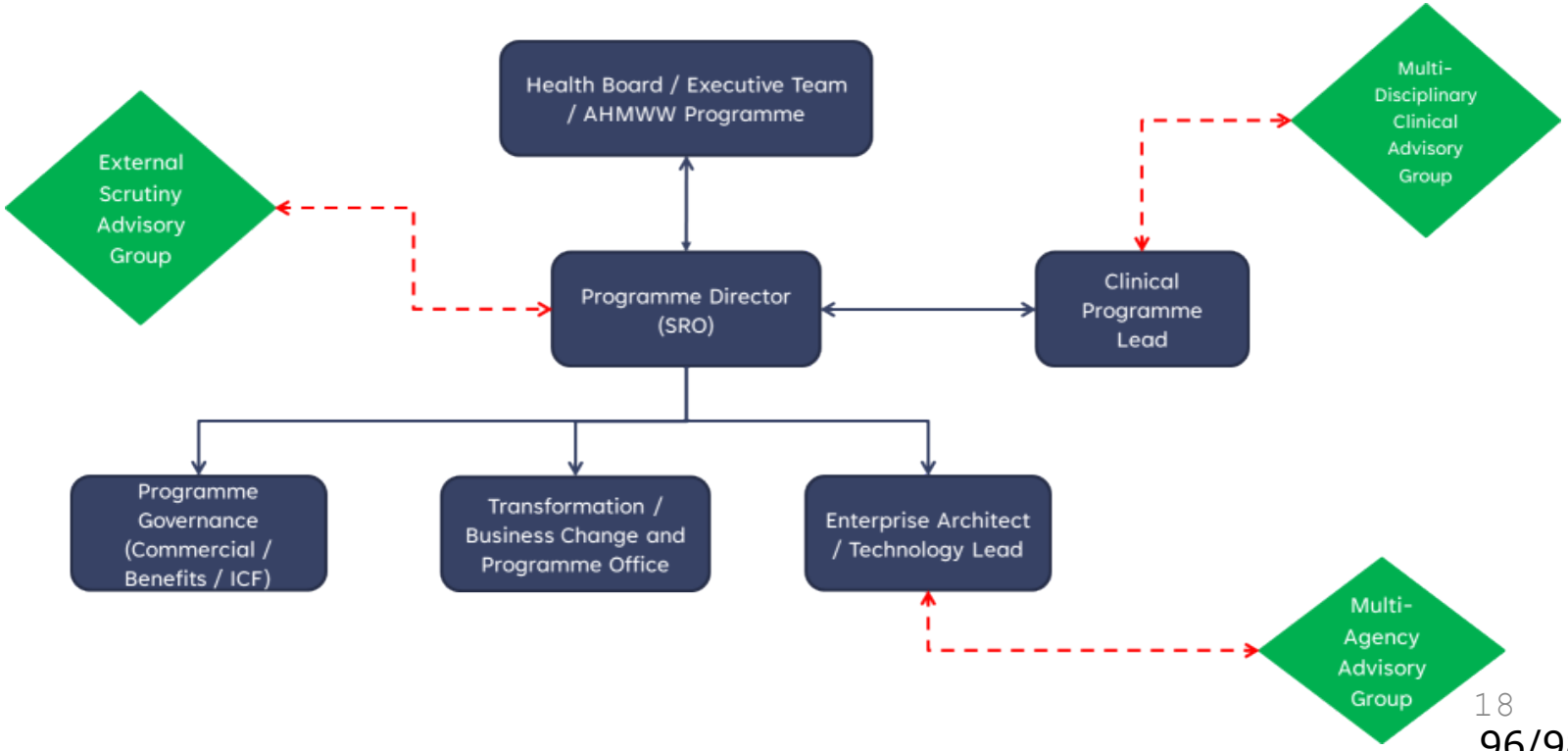
Risk domain	Health Board	Supplier	Shared
1. Design risk			✓
2. Construction and development risk		✓	
3. Transition and implementation risk		✓	
4. Availability and performance risk		✓	
5. Operating risk			✓
6. Variability of revenue risks			✓
7. Termination risks		✓	
8. Technology and obsolescence risks			✓
9. Control risks	✓		✓
10. Residual value risks		✓	
11. Financing risks			✓
12. Legislative risks			✓

Purpose of PBC – Management Case

Management Case

To demonstrate that robust arrangements are in place for the delivery, monitoring and evaluation of the Strategy, including feedback into the UHB's strategic planning cycle

- Provides the detail of the Programme Governance arrangements
- Roles of the programme team
- Proposed accountability structure, pending approval from Board
- We will learn from previous transformation programmes, around pace,



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Purpose of PBC – Management Case

Management Case

- Requires effective Change Management
  - achieve buy-in across stakeholder groups from all sites and departments;
  - gain commitment from users, recognising potential disruption to services and additional effort required during the implementation period;
  - support the changes in working practices that the new arrangements will require; and
  - realise the benefits of implementing technical solutions.
- Effective staff engagement and communications, learning lessons from deployments such as Welsh Nursing Care Record and the roles of clinical teams
- Implementing several programmes at once may cause digital change fatigue with staff, do we will need to be aware of the impact on staff
- Importance of Training and Support to staff and patients
- Benefits Realisation and Measurement

Purpose of PBC – 5 Cases

Financial Case

To demonstrate that the strategy will be affordable and fundable

- Based on work carried out to date, total cumulative savings ranges from £78m - £239m over the 10 year period. The range is based on impact of the technology. In order to generate the range success and confidence factors were used to determine whether there is High, Medium or Low probability for delivery.
- Estimated recurring

	Confidence in Delivery		
	Low	**Medium**	**High**
Indicative Investment over 10 a year period	£76,492,183	£76,492,183	£76,492,183
Annual Savings from Year 5	£35,662,212	£26,563,285	£17,460,269
Pay Back Period	Year 1	Year 1-2	Year 2-3
Cumulative savings over the 10 year programme	£239,118,393	£158,592,891	£78,031,198
Return on Investment	213%	107%	2%