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Bwrdd Iechyd Prifysgol
Hywel Dda
University Health Board

Transformation with Digital at the heart

Setting the scene

Digital enablement of health & care provision is key to supporting the strategic ambition for Hywel Dda, to further:

- Create a truly integrated and resilient health and care service, supporting the needs of the Hywel Dda region.
- Provide citizen-led connected pathways, unlocking new digitally-enabled ways of working, improving outcomes for all in a financially sustainable way.
- Empower citizens to stay healthy and well, addressing inequalities and providing proactive and appropriate care at the right time and place.



During today's session we will explore how digital enablement can support Hywel Dda UHB's ambitions and unlock positive patient outcomes.

Our Patient Vision

Our digitally transformed future healthcare vision...

In the future we will have digitised all the events and information that relate to a patients care into an easily accessible data store that can be shared with our partners. Clinicians will be able to view all the requests and results relating to a patient, including images, not only from our Health Board but also our partners in primary, secondary and community care.

By digitising the complete care pathway, from admission through medicines administration and onto discharge, patients will receive better and safer care as our teams will have a clear and easily understood picture of the patient's health.



The Challenge / Complexity

The Health Board is facing several key challenges:

- 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, an increased incidence of chronic disease, and the demand for more costly, complex and advanced procedures
- There is a **lack of sustainable digital infrastructure** to allow access to systems for primary, secondary and community staff, some of which require upgrading, also noting the lack of equipment on wards and for community-based staff
- There is **no single, shared patient record**
- Hywel Dda University Health Board (HDdUHB) remains 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
- 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.

Channels



GP



SOCIAL CARE



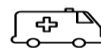
HOME CARE



THIRD SECTOR



ACUTE



AMBULANCE SERVICE



POLICE SERVICE



FIRE SERVICE



CALL CENTERS Including Alarms



WEB

National Services

CITIZEN IDENTITY

- NATIONAL HEALTH PLATFORMS
- NHS WALES APP
 - WELSH CLINICAL PORTAL (WCP)
 - WELSH PATIENT ADMINISTRATION(WPAS)
 - WELSH NURSING CARE RECORD(WNC)
 - PHARMACY - WELLSKY
 - WELSH RIS/PACS
 - MASTER PATIENT INDEX (MPI)
 - WELSH CARE RECORDS SERVICE (WCRS)
 - WELSH RESULTS REPORTING SERVICE(WRRS)
 - WELSH PATIENT REFERRAL SERVICE(WPRS)
 - WELSH CLINICAL COMMUNICATIONS GATEWAY (WCCG)
 - WELSH IMAGE ARCHIVE SERVICE (WIAS)
 - WELSH LABORATORY INFORMATION SYSTEMS (WLIMS)
 - WELSH COMMUNITY CARE INFORMATION SYSTEM (WCCIS)
 - WELSH EYE CARE SYSTEM (WECS)
 - WELSH INTENSIVE CARE INFORMATION SYSTEM (WICIS)

Citizen / Patient Engagement REGIONAL SOLUTION GAP

SIGNPOSTING /INFORMATION MULTIPLE	MY HEALTH AND CARE RECORD GAP	MY CONSENT GAP	REMOTE CONSULTATIONS 	MY ID MULTIPLE
MY DEVICES AND SENSORS PILOT	MY HEALTH CONDITION TRACKING MULTIPLE	MY REQUESTS MULTIPLE	MY ALERTS AND NOTIFICATIONS GAP	MY CARE PACKAGE GAP

Multi-Disciplinary Teams Collaboration REGIONAL SOLUTION GAP

MY PATIENT/CITIZEN RECORD MULTIPLE	REVIEW, REFER, REQUEST AND DECISION MULTIPLE	MY ACTIONABLE ITEMS MULTIPLE
MY SCHEDULE MULTIPLE	MY ALERTS AND NOTIFICATIONS MULTIPLE	MY ID MULTIPLE

Health and Care Pathways and Flow

IDENTIFICATION MULTIPLE	SELF-MANAGEMENT & ENABLEMENT MULTIPLE	ADVICE AND PLANS MULTIPLE	REGULAR MONITORING MULTIPLE	TRACKING PROGRESS MULTIPLE	CLINICAL REPOSITORY MULTIPLE	CLINICAL & WELLBEING APPS MULTIPLE
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Situational Awareness: Digital Operations and Control REGIONAL SOLUTION GAP

OVERALL SITUATIONAL AWARENESS, MONITORING AND ALERTING
GAP

REMOTE PATIENT MONITORING GAP	COMMUNITY CARE SCHEDULING MULTIPLE	REMOTE DEVICE ASSET MGT AND MONITORING GAP
IN- PATIENT MONITORING MULTIPLE	ACUTE & PRIMARY CARE ROSTERING AND RESOURCE MGT TBC	ACUTE CARE ASSET MGT AND MONITORING GAP
MULTI-DISCIPLINARY CASE MANAGEMENT GAP		

Regional Data Fabric – Analytics and Automation REGIONAL SOLUTION GAP

DATA LOAD AND STREAMING MULTIPLE	ROBOT PROCESS AUTOMATION PILOT
HEALTH AND CARE REFERENCE ANALYTICS MODEL MULTIPLE	CHAT BOTS MULTIPLE
DASHBOARDING MULTIPLE	ARTIFICIAL INTELLIGENCE PILOT
MACHINE LEARNING PILOT	DATA STORAGE MULTIPLE

Regional Data Fabric – Record and Orchestration REGIONAL SOLUTION GAP

API GATEWAY MULTIPLE	AUTHENTICATION AND IDENTITY MANAGEMENT MULTIPLE	RECORD LOCATION MULTIPLE	RULES MANAGEMENT MULTIPLE	EVENT MANAGEMENT MULTIPLE
API MANAGEMENT MULTIPLE	TERMINOLOGY AND MAPPING MANAGEMENT MULTIPLE	MASTER PATIENT/CITIZEN INDEX MPI MULTIPLE	SHARED DATA CONTRACTS MULTIPLE	SHARED DATA AUTHORISATION MULTIPLE

Local Government

SOCIAL CARE CASE MGT			DIGITAL FRONT DOOR		
PEMBROKESHIRE	CAMARTHENSHIRE	CERIDIGIAN WICCS	PEMBROKESHIRE BESPOKE	CAMARTHENSHIRE ORANICUS	CERIDIGIAN ebase
CARE SCHEDULING			ASSISTED LIVING		
PEMBROKESHIRE CM2000	CAMARTHENSHIRE CM2000	CERIDIGIAN CM2000	PEMBROKESHIRE PILOT	CAMARTHENSHIRE PILOT	CERIDIGIAN PILOT
BUSINESS INTELLIGENCE					
PEMBROKESHIRE MULTIPLE	CAMARTHENSHIRE MULTIPLE	CERIDIGIAN MULTIPLE			

HYWEL DDA UNIVERSITY HEALTH BOARD

GP MANAGEMENT cegedim emis health	CLINICAL PORTAL WCP	ELECTRONIC PATIENT RECORD WPAS	PATIENT TRACKING TBC
COMMUNITY & MENTAL HEALTH WNC WPAS	CONDITION/OLOGY MANAGEMENT MULTIPLE	IMAGING RIS/PACS	LABORATORIES WLIMS
DOCUMENT MANAGEMENT CIVICA	PHARMACY MANAGEMENT WELLSKY	RADIOLOGY RIS/PACS	PATHOLOGY TBC
REPORTING /BUSINESS INTELLIGENCE NIAS	REFERRALS AND REQUESTING GPTR* WPRS WICCS		
HUMAN RESOURCES TBC	ROSTERING TBC	FINANCE MANAGEMENT TBC	

LLESANT DELTA WELLBEING

ALARM RECEIVING AND ALERTING Tunstall	ASSISTED LIVING PILOT
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Digital Transformation Achievements



Introduced a new digital service desk tool, which has improved the communication with the users, with an automated “bot” integrated into Teams



The extensive network replacement programme is still ongoing. Bronglais has been completed, Prince Philip and Withybush to be completed



Significant progress has been made with our cyber resilience, with 15 programmes of work. A recent internal audit report gave the cyber programme within the Health Board a “substantial” rating.



The Health Board has launched its first application solely within the cloud (Electronic Document Management System), and are now planning for an extensive rollout of all systems and infrastructure into the cloud, adopting the national policy of “Cloud First”



Implemented the Bed Management module in Welsh Patient Administration Systems (WPAS) across Acute Hospitals now working on the community sites. The operational team have already seen benefits from the implementation



Continuing to meet the national target for Clinical Coding completeness alongside now undertake audits to ensure high quality information is contained within the clinical notes



Welsh Nursing Care Record, Malinko and Welsh Community Care Information Sstems (WCCIS) data are now available in the data warehouse, allowing linkage of community data with secondary care data.



The Health Board has adopted all the most recent system releases, of WPAS, Welsh Clinical Portal and the Welsh Nursing Care Record.



The new switchboard technology has been implemented across all 4 sites, allowing our telephony modernisation project to continue at pace. This will remove the analogue infrastructure from the Health Board and move towards an internet-based approach which will improve agile working.



Staff development - 4 members of digital team graduated this year as part of the first cohort of Digital Degree apprenticeships with University of Wales Trinity Saint David (UWTSD), and other members of the team passed their MSCs



Robotic Process Automation – Proofs of Concept underway, opportunity for significant capacity to be released by using RPA, upwards of 50,000 hours by 2025

Digital Transformation Achievements



Developed a System Risks dashboard in partnership with the Performance team along with many dashboards that improve availability of data in real time for operational staff



Civica Scheduling – 600 users across community teams use Civica Scheduling to manage their daily patient visits



Significant improvements in the percentage of electronic test results, circa 70% of all tests are electronically requested for pathology



Successful pilot of radiology electronic test requesting and again rollout into other areas



The Health Board has rolled out our Bedside Entertainment Communication Solution (BECS) pilot in Prince Phillip Hospital, across 2 wards, initial feedback very promising, the impact for both patients and staff is very positive.



Launching the Hywel Dda Digital Application Library, to help our clinicians support patients and citizens to feel empowered to use apps to help manage their health and wellbeing.



Purchased and we are in the process of implementing an electronic document management system to help us enable to digitisation and access of medical records, long term project over the coming years.



During 2022, we have established a dedicated Data Science Team with intent to pursue serious data science.



Built a Data Science Platform with advanced interactive analytic tools covering, forecasting, geographical representation and pathway visualisation.



Produced several innovative deep dive Patient Outcome Measures (PROM) reports to facilitate service review



Undertaken Machine Learning to predicts outpatient DNA, which we are looking to pilot in the operational teams



Signed the Digital Inclusion Charter, and as a Board have approved a digital inclusivity programme covering citizens, patients and staff



We have also developed a robust benefits realisation process and approach which is utilised within Digital providing a framework to allow benefits to be truly monitored and tracked.

Executive Summary - Enabling a vision for integrated health & care in the Hywel Dda region

Making a difference...We have to see people in the context of their lives and ask them what matters to them so that people make decisions that are right for them.

Underpinned by regional statement of intent to establish:

- **A truly integrated and resilient health and care service, supporting the needs of the Hywel Dda region.**
- **Providing citizen-led connected pathways, unlocking new digitally-enabled ways of working, improving outcomes for all in a financially sustainable way.**
- **Empowering citizens to stay healthy and well, addressing inequalities and providing proactive and appropriate care at the right time and place.**

To further accelerate digital 10-year transformation, investment is needed to unlock outcomes and achieve our vision.

- A £7.5m investment per annum over a 10-year period
- Typical positive net returns on the investment in a 2-3 year period from initial investment
- Can deliver up to 2.5 times return on investment
- A value case assessment has been undertaken and we are validating the findings.

Executive 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 **three key areas** of Demand Management, Response Management and Enterprise & Asset Optimisation. This has the potential to unlock c. **£17.4m to £35.6m** per annum of value to the West Wales region.

- 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 3 years using iterative delivery methods.
- Supporting **future change** will prepare HDdUHB for the delivery and adoption of digitally-enabled citizen, patient and employee-centric solutions and the realisation of benefits.



'Pain points and opportunities for change': additional comments

Question 1

Areas for Better Working

- Leadership enabling joined-up working and communication
- Third sector partnering
- Address *perceived* reluctance towards digital services
- Integrated patient record and staff scheduling system
- Regional rather than County systems
- Innovative assisted living options
- Joined up health and care systems

Question 2

Citizen Challenges

- Lack of information, or knowing where to access the information
- Waiting without contact from relevant professionals
- Time to appointment
- Multiple contact points making accessing services confusing and lengthy
- Lack of visibility, even where to go for help
- Concern regarding impact of delays on their health
- Transport services

Question 3

Your Frustrations

- Lack of engagement across teams
- Sharing documentation and access
- Tired, under pressure and change fatigued
- Lack of linked services
- Lack of integration, system and process
- We don't celebrate successes properly which narrows the focus on negative outcomes.
- Visibility of who's who
- Poor feedback following surveys/consultation

Question 4

Data Accessibility

- Standard digital solution required to share information
- Public health data required
- Data is NOT accessible
- Multiple systems is a key challenge
- Huge variation in how data is captured and shared
- Systems not easily accessible – training and restricted access challenges
- No consistent 'unique identifier' to identify citizen/patient

Question 5

Partner Relationships

- In the main, relationships are good
- Third sector can be forgotten or missed
- Integrated health records!
- Competing portfolios impact ability to leverage relationships
- Need to acknowledge where this does not work in order to make improvements
- Willingness to work together, made difficult by systems and processes




Question 6

Current Challenges

- Limited resources
- Private sector competition
- Multiple systems - access and sharing issues
- Front line staff and management engagement
- Understanding of service demand
- Time to learn – technology and process
- Accessibility of national services and systems
- Duplication!!

Development of Hywel Dda Business Imperatives (1 of 2)




Stakeholder				Citizen			
01	02	03	04	05	06	07	08
'Holistic Health & Care Vision'	'Common Priorities'	'Governing Integration'	'Positive Regional Outcomes'	'Resilient Communities'	'Joining the Dots'	'Citizen Healthy Lifestyle'	'Prevention & Early Intervention'
Create & enable holistic health & care vision, priorities & target outcomes across the ecosystem to ensure organisational alignment & service provision	Establish a set of common priorities & ways of working at all levels across the region to unlock operating efficiencies & improve experience	Ensure governance allows for effective prioritisation based on shared vision & outcome-driven roadmap across the ecosystem to support local needs	Connecting key stakeholders to optimise positive outcomes for the region, based on Welsh Government's strategic direction	Enabling resilient communities through economic prosperity, effective learning pathways, regional facilities & transport to maximise health & care outcomes	Creating a person-centred view to enable end to end effective operational delivery	Empower citizens with knowledge & local facilities to support healthy lifestyles reducing demands on health & care services	Signpost & focus resources on prevention & targeted early intervention to improve wellbeing outcomes
Citizen				Employees			
09	10	11	12	13	14	15	16
'Service Signposting'	'Citizen Experience'	'Optimise Where Care is Given'	'Building Capabilities'	'Designing Roles'	'New Ways of Working'	'Enabling Change'	'Workforce Sustainability'
Identify single points of contact with clear roles across the ecosystem to ensure effective signposting for citizens	Focus on & measure citizen satisfaction to leverage operational insights for improvement	Ensure citizens engage with health & care services in the right place at the right time to improve experience & outcomes	Enabling people, roles, careers & capabilities through improved ways of working to support patient needs & increase service capacity	Re-setting the boundaries across existing roles to support patient needs & increase service capacity	Support new organisational ways of joined up working across health & care ecosystem providers to improve health outcomes	Enabling the workforce to support the implementation of change & work in the new ways	Attract, recruit, onboard, train & retain the right people with the right skills to enable quality operations & minimise use of supply/agency staff

Key		Common Priority Imperatives
		HDdUHB Priority Imperatives
		Initial LA Priority Imperatives

Development of Hywel Dda Business Imperatives (2 of 2)

Enterprise					Information			Partners
17	18	19	20	21	22	23	24	25
'Operational Running'	'Demand, Supply & Configuration'	'Resource Scheduling'	'Infrastructure Sustainability'	'Reducing Financial Deficit'	'Citizen Outcome Measures'	'Information Hub'	'Real-Time Medical Dashboard'	'Ecosystem Outcome Measures'
Support staff & provide the right tools to maximise day to day operational running of activities & planned care	Establish a real time & forward view of demand & supply capacity across the region to enable effective & efficient configuration of operational running	Create real time scheduling capability for front line operational staff & other ecosystem organisations to improve productivity	Ensure health assets & infrastructure are suitable for effective working & efficient running to support health & care demands	Creating a roadmap to ensure future services have an operating cost improvement which can be used to reduce existing deficit	Balance measures of activities & outcomes to provide true insights & support effective running	Create an insight-led integrated info hub that connects real time data to enable decision making across the ecosystem in the moment, medium & longer term	Create integrated dashboard to assess medical observations to enable real time action & response	Define a core set of organisational outcome based measures, relevant across the ecosystem to maximise operational effectiveness

Partners		Solution						
26	27	28	29	30	31	32	33	34
'Extending the Ecosystem'	'Partner Collaboration'	'Benefits Realisation'	'Digitally Enabled'	'Tech-Enabled Operations'	'Community Data'	'Easy to Use Solutions'	'Patient Recovery Flow'	'Data Protection & Use'
Exploiting insights from across extended ecosystem partners (e.g. police, fire, third sector) to enhance health outcomes	Provide effective partner collaboration across the health & social care ecosystem to enhance health outcomes	Ensure defined outcome based measures are effectively tracked to enable benefits realisation	Leverage digital tools to provide operational insight, improve services & free up resources to focus on high value interactions	Provide stakeholders with relevant access to existing & new systems across regions to support connected information exchange & positive outcomes	Identify, manage & connect data across citizens, services & third party organisations to improve operational running	Ensure technology solutions are human-centric & easy to use for citizens & employees to maximise usability	Ensure technology solutions generate predictive asset & resource needs to optimise health and care provision	Ensure relevant access, appropriate protection & ethical use of data across the ecosystem to safeguard citizen privacy

Key	 Common Priority Imperatives
	 HDdUHB Priority Imperatives
	 Initial LA Priority Imperatives

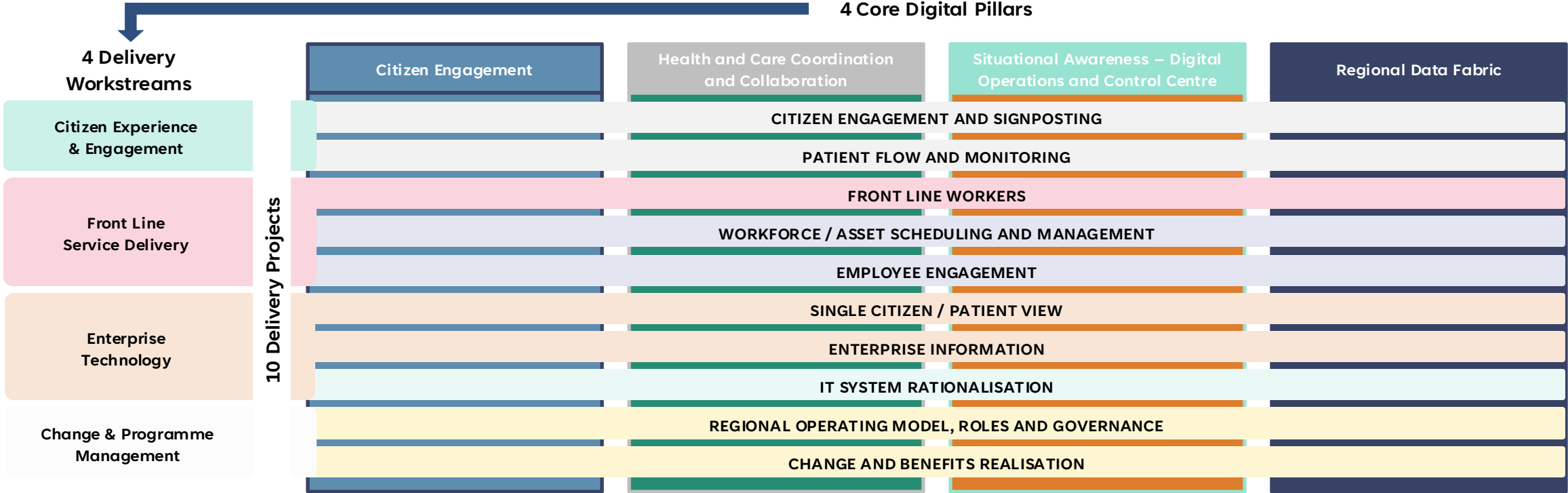
Key inputs to transformation on a page

34 Strategic Business Imperatives

Stakeholder				Citizen							Employees					Enterprise
01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17
'Holistic Health & Care Vision'	'Common Priorities'	'Governing Integration'	'Positive Regional Outcomes'	'Resilient Communities'	'Joining the Dots'	'Citizen Healthy Lifestyle'	'Prevention & Early Intervention'	'Service Signposting'	'Citizen Experience'	'Optimise Where Care is Given'	'Building Capabilities'	'Designing Roles'	'New Ways of Working'	'Enabling Change'	'Workforce Sustainability'	'Operational Running'
Enterprise				Information			Partners			Solution						
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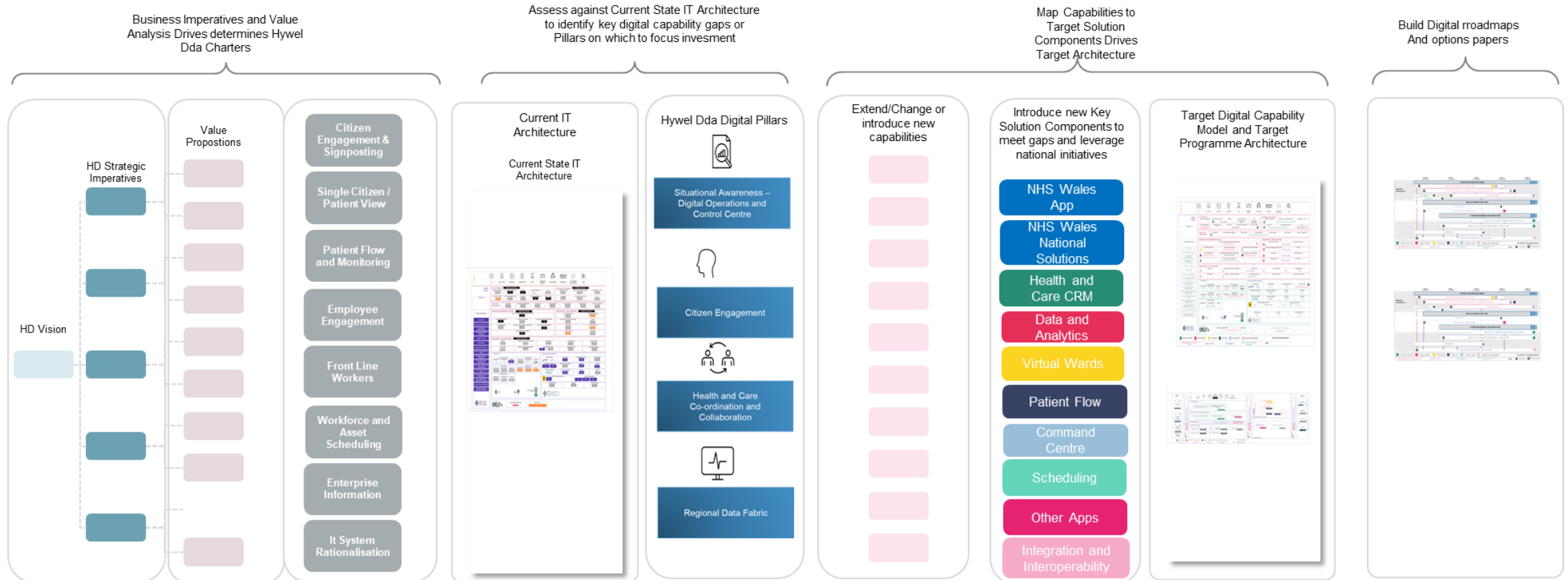


4 Core Digital Pillars



Building a digital transformation roadmap: our approach and end to traceability

How do we determine our digital roadmap and architecture





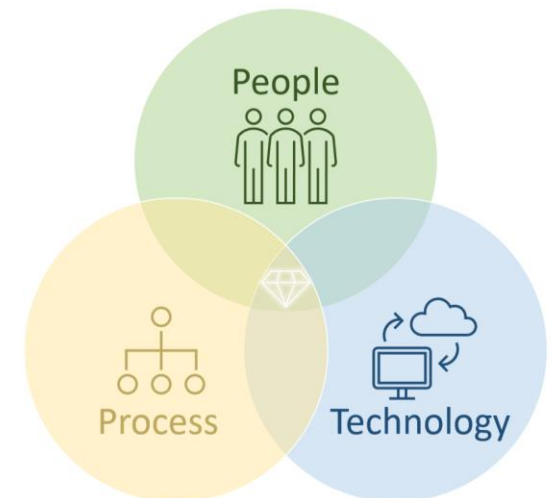
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Digital enablement, the case and the plan to deliver:

Reflections on our Digital Journey

- We have significantly **changed the way we deliver projects**. Due to the greater demand for change, programmes needed to be provided much more rapidly than in pre-pandemic days and it has been fantastic for us to be able to respond to that.
- We have changed our mindset away from technology being **the barrier to achieving better outcomes towards a focus on how we can leverage the change** with people and improve adoption resulting in better outcomes and value
- We have seen the **acceleration of digitisation** across services, however, we also need to ensure **areas with plans** already in place are given the opportunity to move forward with the same pace.
- While we should certainly reflect proudly on the overwhelming amount of work that's been achieved, we need to ensure **we work at a pace that is sustainable** whilst not losing sight of the positives, such as wider digitisation.
- **Areas to improve**
 - Underestimation of the importance on communication
 - Non-Digital staff and patients
 - Considering the impact on staff. Whilst we can digitise – should we?
 - Building a Digital Ready Workforce



Digital Strategy – Future Approach

Appointment of a Digital Transformation Strategic Partner:

The aim of the partner is to digitally enable transformation through the integration of digital technology into all areas of a business, resulting in fundamental changes to how businesses operate and deliver value. The scope of the strategic partner is expected to cover the following elements:

- a) Support for the upcoming Transformation Programme with Digital at the Heart
- b) Support for future IT / digital change and transformation work
- c) Provide expert advice around our data / analytics ambitions
- d) Challenging conventional thinking.
- e) Bringing ideas and innovation.
- f) Giving consideration of whole system thinking.
- g) Applying solution focus to practical outcomes.



Digital Strategy – Future Approach

Refreshed “Digital Response”

The Digital Response was written in 2020 and outlined the strategic vision for investment in digital. However, COVID required the Digital Team to reprioritise. Notwithstanding this the commitments, aims and objectives of the document are still relevant in that our commitment is to improving digital technology in the Health Board. The Digital Response has helped provide a strategic vision for the Health Board for working together to drive excellence in care for our patients and communities using technology, and data.

We will be looking to refresh the Digital Response in 2025, reflecting the work undertaken to date, the changing impact of technology and the development of a data strategy which will provide a journey towards the use of data in decision making. We will be looking to reframe the response to provide a clear vision for staff and patients, on what they can expect from the Health Board in the coming years. It will be focused on what we can achieve in the next 1-3 years, 5-7 years and 7-10 years, with a specific emphasis on what will be impactful, for example.



Digital Strategy – Refreshed (Key Themes)

- a) Improving patient safety** – We should ensure that digital technologies are safe and used to improve patient safety. This includes:
- Collecting information about digital clinical safety,
 - Expanding digital clinical safety training,
 - Creating a centralised source of digital clinical safety information,
 - Developing the role of the clinical safety officer
 - Development of an Electronic Health Record (EHR), via the introduction of key systems, Patient Flow / eObservations / ePMA and further explanation of the EDRMS
- b) Supporting independent healthy lives** – We should give people more control over their health and care by:
- Increasing the functionality of the NHS app and website
 - Scaling digital health self-help, diagnostics, and therapies
 - Developing the Hospital @ Home approach
 - Harness IOT in the Home to provide additional support and monitoring
- c) Enabling access to digital technologies** – We need to ensure that everyone has access to digital technologies, including people who are socially excluded. This includes:
- Providing access to connected devices for socially excluded groups through our Digital Inclusion Programme
 - Collaborating with other agencies to provide access to technology and data
- d) Using artificial intelligence (AI)** – Under strict guidance and ethics the Health Board need to consider the AI to improve clinical care, such as in screening and diagnostics for cancer, stroke, and eye disease assisting in clinical decision making.
- e) Driving Value and Reducing Waste** – We as digital team need to ensure that we are driving value from all digital programmes, and as such looking to wherever possible reduce the perceived waste in the system, both from a front line and administrative perspective.

Digital Strategy – Risks to Delivery

The delivery of the Digital Strategy faces several key risks that need to be proactively managed and mitigated. Some of the top risks include:

- **Resource Availability and Affordability:** Ensuring that the necessary resources such as staff, skills, equipment, infrastructure, and funding are available and affordable to deliver and sustain the digital solutions.
- **Integration, Interoperability and Resilience:** Our aim is to create an integrated and resilient health and care service that supports the needs of the Hywel Dda region. This involves providing citizen-led connected pathways and unlocking new digitally enabled ways of working to improve outcomes for all in a financially sustainable way will rely on national systems that will be able to integrate. Currently the APIs (are taking upwards of 18 months, which is significant risk).
- **User Engagement and Adoption:** Engaging and ensuring the adoption of digital solutions by end-users, including patients, staff, and partners. This involves making sure they are aware, informed, trained, supported, and motivated to use the digital tools and services.
- **Data Protection and Security:** Protecting and securing data and systems from unauthorised access, cyberattacks, breaches, or losses to ensure the confidentiality, integrity, and availability of information and services.
- **Technical, Operational, or Clinical Issues:** Managing and resolving any technical, operational, or clinical issues or incidents that may arise during the implementation or operation of the digital solutions to ensure the continuity and quality of service and care.
- **Delivery:** Fundamental there is a perceived lack of delivery making it exceedingly difficult to deliver at pace for the clinical needs of the Health Board.

These risks highlight the importance of careful planning, resource management, and stakeholder engagement to successfully deliver the Digital Strategy.

Approach to Clinical Safety

At Hywel Dda University Health Board, our approach to clinical safety is developing but is multifaceted, ensuring that we maintain the highest standards of care and patient safety. Here are some key aspects of our approach:

- 1. Clinical Safety Leadership:** We are looking to establish designated clinical safety leads who are responsible for overseeing and co-ordinating clinical safety activities for all major digital systems.
- 2. Training and Awareness:** Staff are trained and made aware of the different information systems in place to ensure they can access the information required to discharge their duties effectively. This includes the deployment of clinical tablets and mobile PC carts in various wards to support clinical processes. We have recently placed all Clinical Information Officers (CIOs) through a clinical safety course. We will be strengthening this approach with the new appointment of a CCIO with Clinical Safety within their roles and responsibilities.
- 3. Digital Clinical Safety:** We collaborate with partners. This involves early discussions on clinical safety for new digital initiatives and ensuring that digital tools are safe and effective for clinical use. This is very much in its infancy but the initial conversations with the supplier include an element of this. All local ran tenders have a specific section around clinical safety.
- 4. Continuous Improvement:** We regularly review and update our clinical safety practices to address emerging risks and incorporate best practices. This includes conducting clinical coding error reports and addressing any identified issues to improve the accuracy and reliability of clinical data.

Our commitment to clinical safety is reflected in our strategic initiatives and day-to-day operations, ensuring that we provide safe, sustainable, and high-quality healthcare services. As a Health Bord we are looking to develop a group of clinical informaticians across AHP, Nursing, and Medical so that can facilitate the clinical safety discussions.

Foundational Clinical Systems

Our ambition is to **implement** the foundational systems Patient Flow / Electronic Observations, and Electronic Medicines Management, **within 12 months**. Overall, these technologies work together to create a more efficient, safe, and patient-centred healthcare environment, ultimately leading to better patient outcomes.

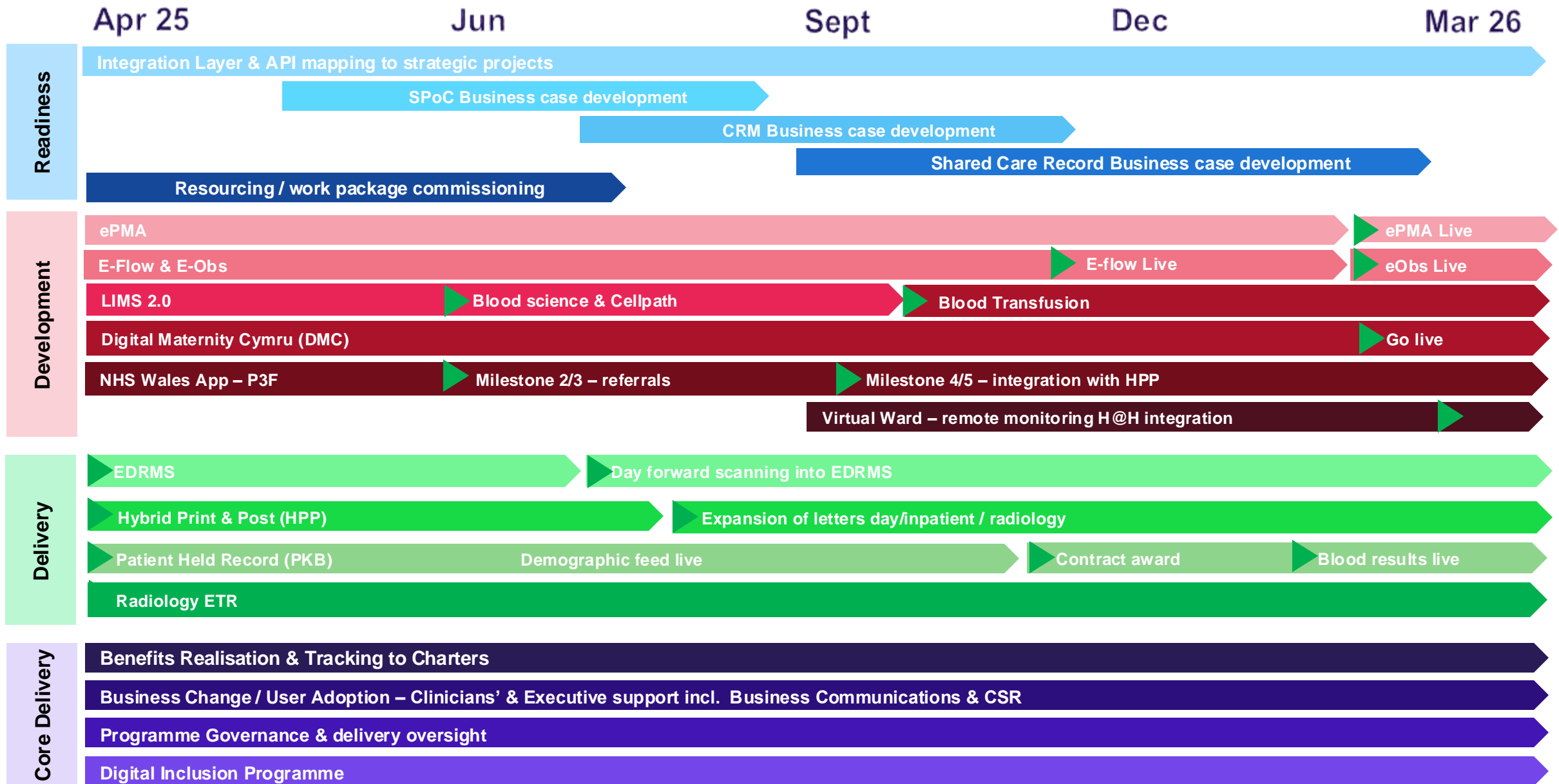
- **Patient Flow:** Efficient patient flow management ensures that patients move smoothly through the healthcare facility from admission to discharge. This reduces wait times, overcrowding, and inefficiencies, leading to better patient experiences and outcomes. Improved patient flow has been shown to reduce the length of hospital stays, decrease patient harm (including fewer cardiac arrests), and increase the time available for direct patient care
- **eOBS (Electronic Observations):** eOBS systems allow for real-time monitoring of patient vital signs and other critical health metrics. This enables healthcare providers to quickly identify and respond to any changes in a patient's condition, improving patient safety and outcomes. The use of eOBS has been associated with reduced patient harm and better overall care quality.
- **EPMA (Electronic Prescribing and Medicines Administration):** EPMA systems streamline the prescribing and administration of medications, reducing the risk of errors and ensuring that patients receive the correct medications at the right times. This leads to improved medication safety and better health outcomes for patients
- **Digitalisation of Health Records:** The Digital Health Records Programme (DHRP) is a significant initiative aimed at modernising and reshaping health records services to improve efficiency and effectiveness through digital transformation. The programme focuses on creating an integrated electronic record system that allows healthcare professionals to share information about patients, The goal is to provide a single patient record that facilitates care across all settings. Currently have 328,558 Unique Patients, and 64m pages are available through WCP.

Future Foundational Systems

Other key implementations that will look to improve productivity and efficiencies are as follows:

- **Expansion of Hywel Dda Post:** This solution is designed to enhance patient communication by providing access to online appointment information and options, as well as offering a variety of communication formats and preferences. This portal allows patients to specify their communication preferences, ensuring that communications are tailored to their needs. This includes options such as Welsh language letters, large font formats, easy-read formats, Braille, and appointment reminder preferences. It also provides appointment reminders to encourage patients to attend their outpatient appointments but also have the capacity to provide patient questionnaires and surveys .
- **Patient Services Centre:** The objectives of a Patient Services Centre (PSC) is to streamline and enhance patient care by providing a centralised point of contact for all healthcare needs. This approach aims to simplify the process for patients, ensuring they receive timely and appropriate care by reducing the complexity of navigating multiple departments and services. By centralising access to healthcare services, the PSC seeks to improve patient experience, enhance care coordination, increase operational efficiency, optimise resource management, and support data-driven decision-making.
- **Creation of a Patient Relationship Management Tool (PRM) :** Hywel Dda's approach is to implement key foundational systems which will enable the overlay of a Patient Relationship Management (PRM) system to manage all the interactions with the patients through a single-entry point and managed through a Patient Services Centre.
- **AI clinical models:** Medical Imaging Analysis, Virtual Wards, Brain Scan Analysis, Predictive Analytics
- **AI Patient engaging models:** Virtual Health Assistants, Personalised Patient Engagement
- **A&E module:** Welsh Emergency Care Data Set (WECDS) Documentation reporting (Emergency Department/Minor Injuries Unit/Same Day Emergency Care) DHCW web based app or other provision to be agreed.

High Level Programme 12-month view



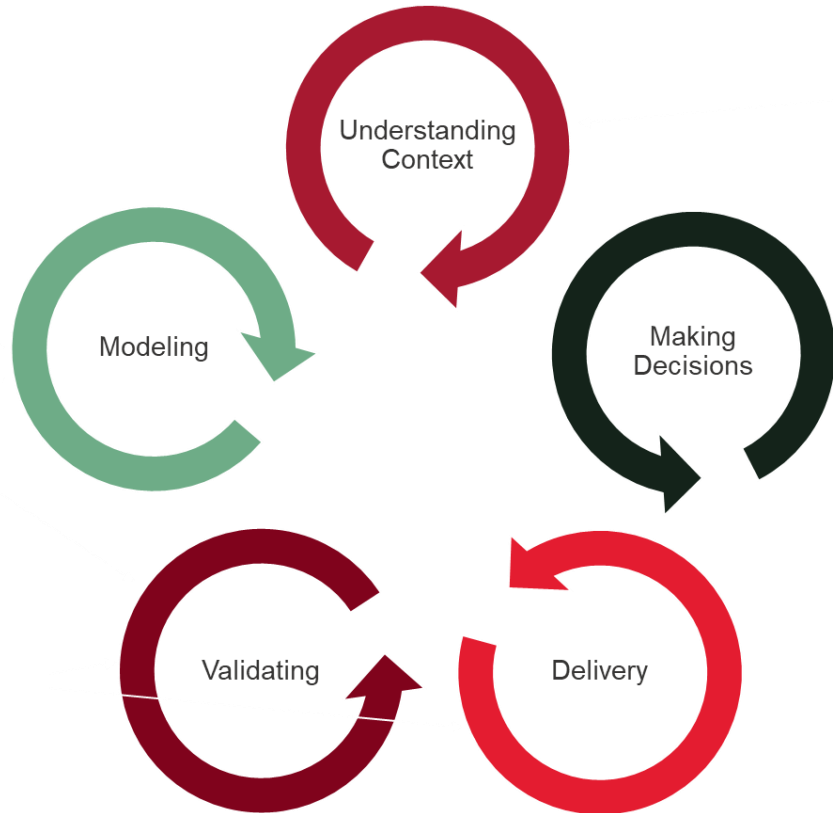


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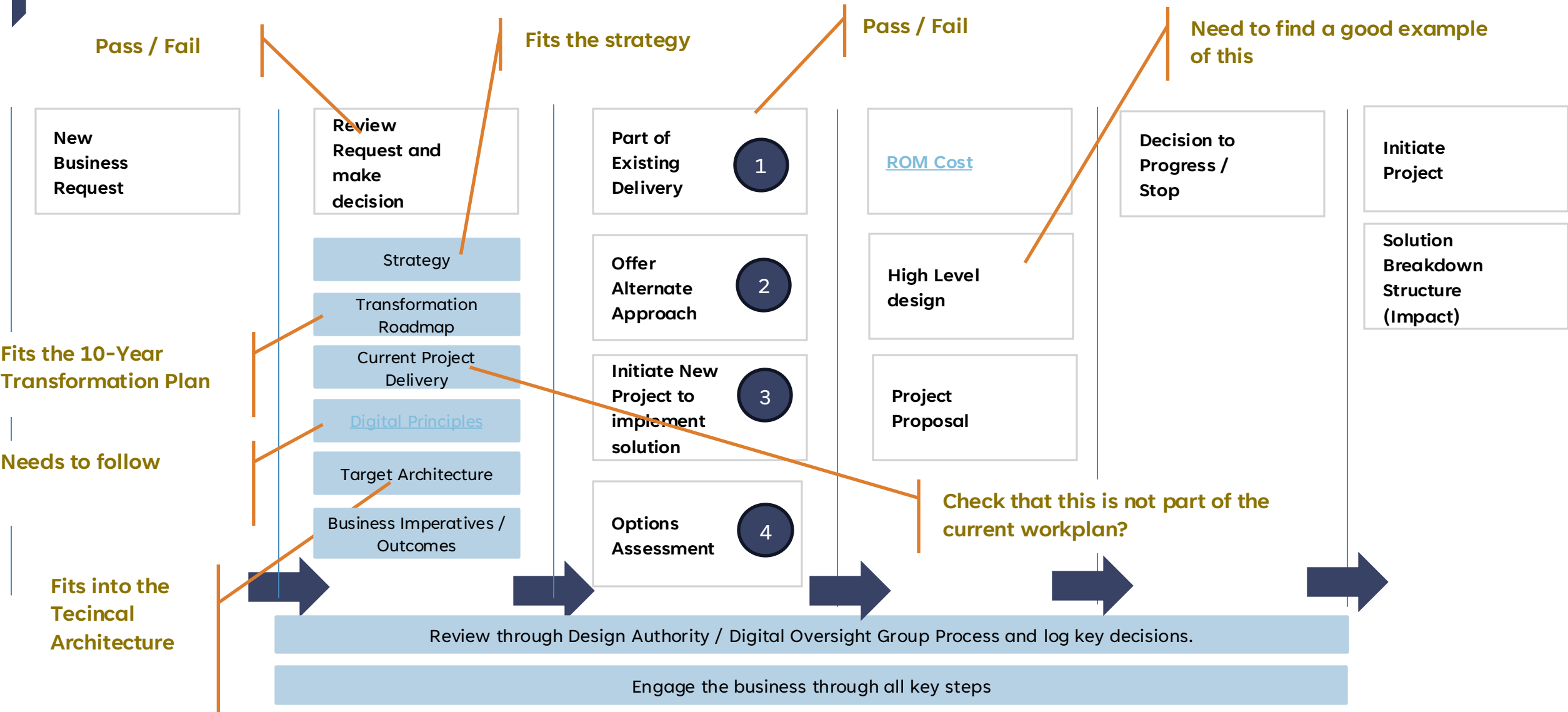
Adopting Programme Architecture process:

Architecture Introduction: What kind of activities do we undertake to develop an architecture approach



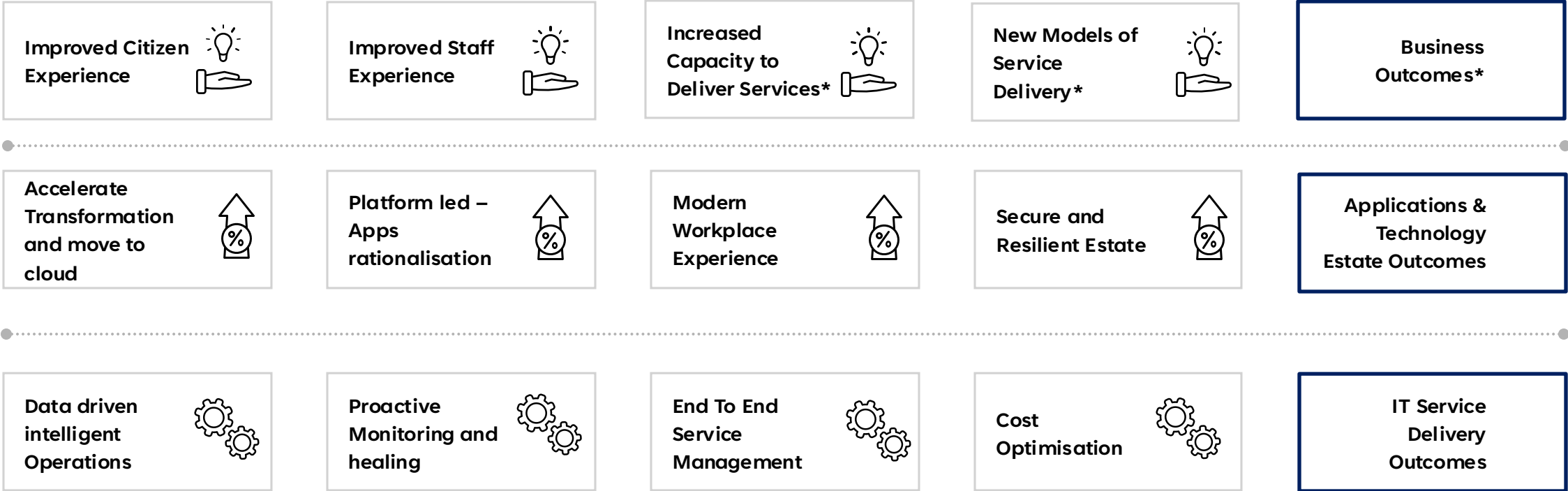
- **Understanding business needs, priorities and context**
- Understanding current technology and systems context
- Developing enterprise capability and other models to provide context to pin strategic digital direction to.
- Developing enterprise and programme architectures (target state) as anchor points to deliver technology and systems against
- Developing and iterating roadmaps towards the target state aligned to priority and value.
- Making Big and Small technology decisions in the wider context of our priorities, our current state and our roadmaps
- Validating and prioritising architecture capabilities and enablers
- Supporting delivery and implementation of business and technology solutions
- Understanding the impact of technology decisions
- Managing risks, issues and technology debt

Managing demand outside of planned transformation



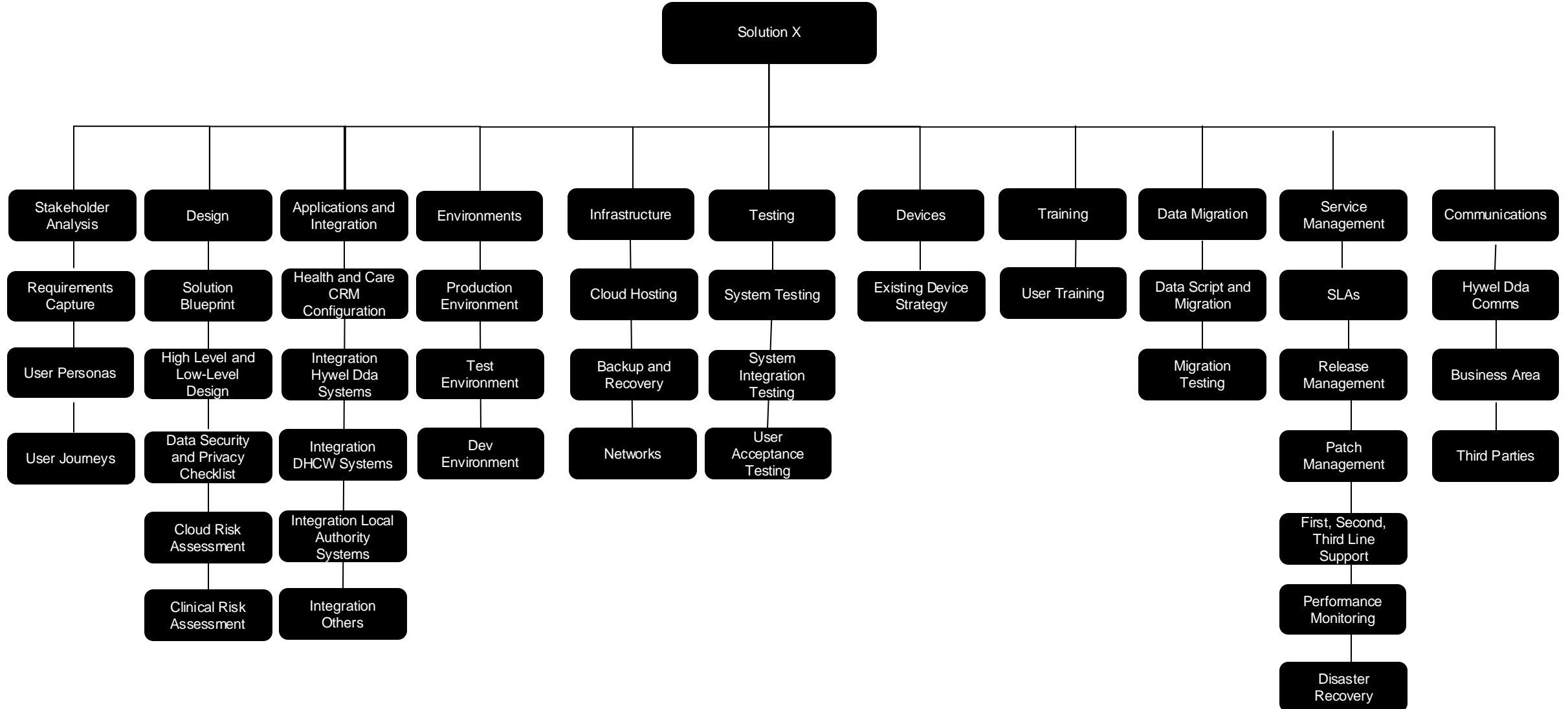
Summary: Driving Key Outcomes through our approach

High Level Outcomes



Managing our estate through consolidated processes can support Hywel Dda in moving towards our core business, digital and IT delivery outcomes .

Solution Breakdown Structure



Key roadmap digital delivery principles

This is a complex programme of work delivering iteratively over a number years. It will have significant impact on our business operating model and will be high complexity from a technology delivery perspective. It is important that we align our solution and technology decision making to a set of core digital delivery principles :

- Data for Insights
- Integrated and Interoperable
- Value-Focused
- Person-Focused
- Embedded Business Change
- Platform based
- Employee Experience and Usability
- Innovation and learning culture
- Enterprise Wide, Cloud First Solutions
- Leverage Existing Digital Investment
- Re-use before buy or build
- Safe and Secure



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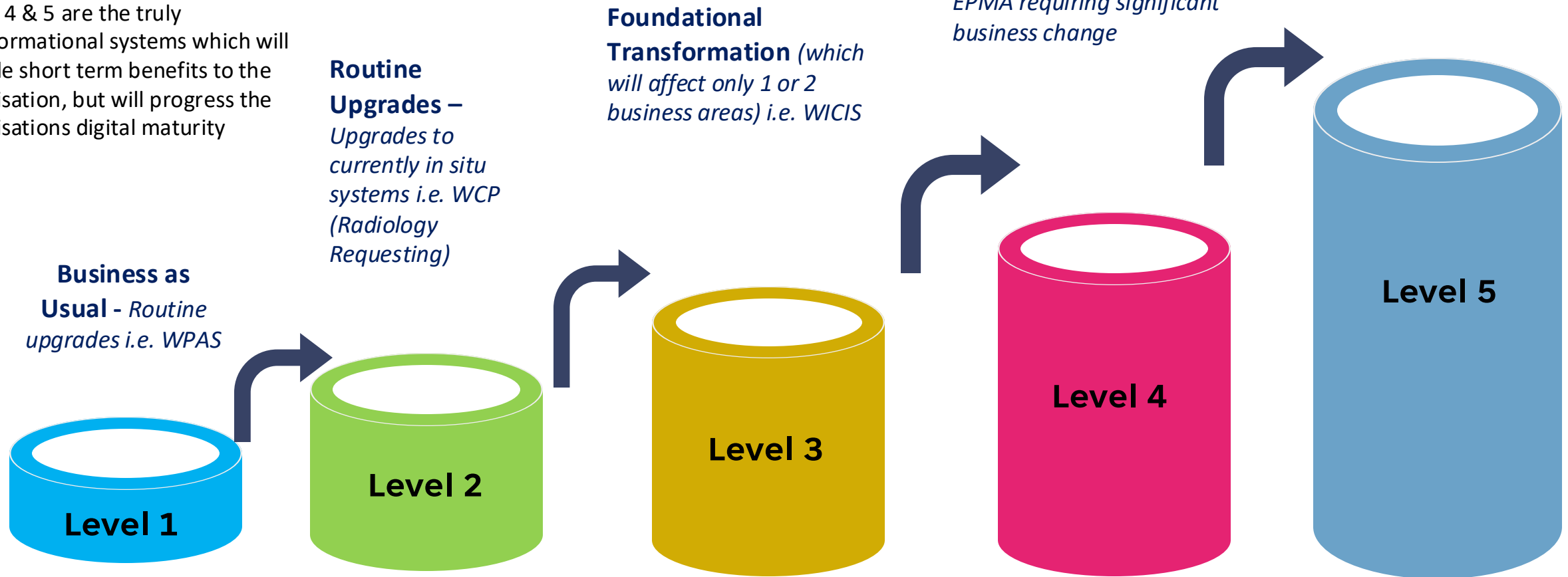
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Transformation Approach:

Levels of Transformation the approach

We looking to implement a new targeted operating model within digital which will see the Health Board along with Digital Health and Care Wales concentrate on transformation levels 1 through 3 and our strategic partner along with support from the Health Board concentrate of Levels 4 & 5 which will require more specialist resources which can be bought in at scale to provide the pace of delivery.

Levels 4 & 5 are the truly transformational systems which will provide short term benefits to the organisation, but will progress the organisations digital maturity



Prioritisation of Digital Programmes

The Health Board will look to adopt a 4-quadrant approach to its digital transformation. The intersection between the two axes creates the four quadrants of the digital transformation roadmap: quick wins, Foundational transformation, Routine upgrades, and strategic transformations.

When developing a digital transformation roadmap, the Health Board will begin with the transformation's quadrant and work backwards, identifying the smaller projects they need to undertake to achieve their end vision. Each of these projects need to deliver value along the way, both so that an organisation progresses along its digital transformation roadmap and to make it easier to implement.

Strategic / Regional Transformations (Level 4&5)

The transformations quadrant, at the top right, is where the Health Board will plot its large-scale programmes, Achieving this end vision may seem daunting, so the next step is to focus on quick wins.

Business as Usual (Quick wins) (Level 1)

Quick wins are projects that are easy to implement, useful to everyone, and can be started right away. A quick win should be a valid project in its own right that will create value in a very short timeframe with relatively little effort.

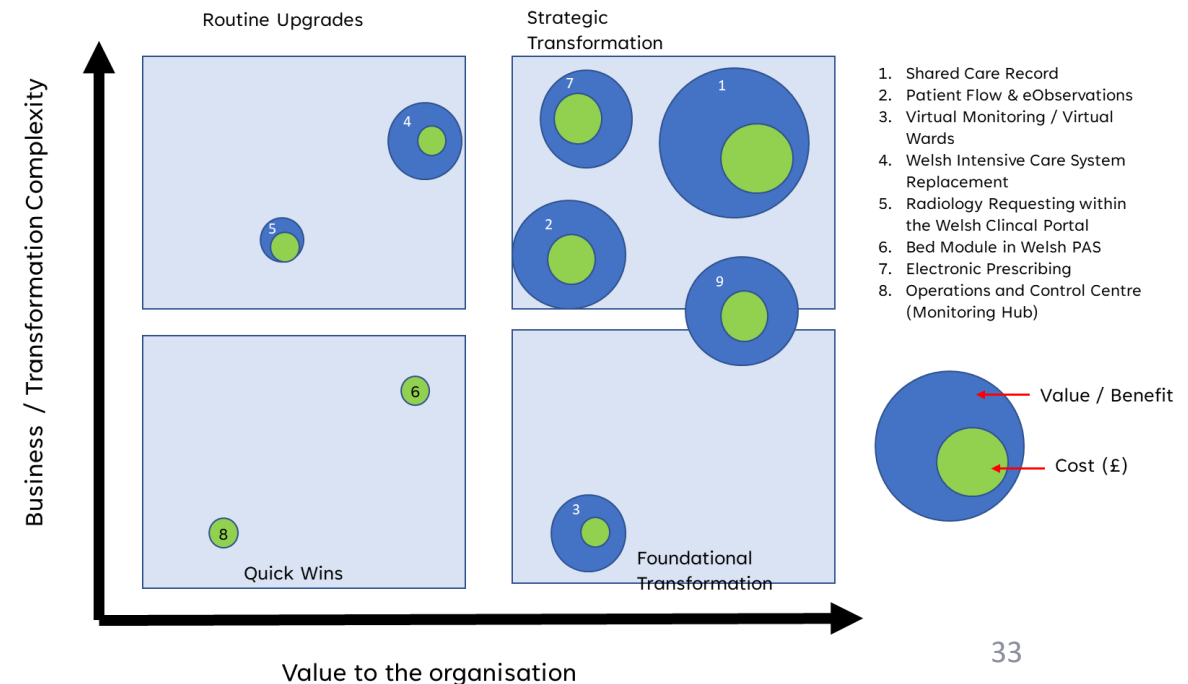
Routine Upgrades (Level 2)

These projects help the organisation explore newer, faster, and radically innovative methods to reach its end vision. They not only add value but also demonstrate the organisation's commitment to breaking away from the old ways of doing things and implementing change.

Foundational Transformation (Level 3)

Projects in this quadrant are often extensions of quick wins. These projects may be longer in duration and still operate within 1 or 2 elements of the Health Board. While they may not leverage any new technology, they allow the organisation to optimize their quick wins from the comfort zone of their existing environment. They are continuous in nature and create progress at scale for existing activities. After filling out all of the quadrants, the organisation can connect the dots, linking its developments with its quick wins and disruptions, to add value to the business and ultimately achieve its end vision.

Below is for illustrative purposes only





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What Does it mean to me or us:

Personas and Digital Journey Maps

Personas

Future state patient and staff personas exemplify the user's future needs, experiences, behaviours and goals, which is valuable to **drive design decisions**. A persona is a sketched representation of a person from within a subset of the identified stakeholders. It is not meant to be an exact representation but an idea of what motivates a person, what their frustrations and pain points are and how to address them. This allows a design and build of roles to enable a new approach to layered care using a user-centred process. Personas are valuable on their own, as they can be used to plan for future roles, including the future technology and data to consider. For the digital strategy a number of personas will be created, covering patients and staff.

- Patients – Inpatient, Outpatient, Career
- NHS Staff – Operations, Estates, Staff Porter, Doctor, Nurse, AHP

Journey Maps

Whilst personas are valuable on their own, it is useful to take them one step further and create a persona journey map. A persona journey map is where a persona's end to end experience with the Health Board is stepped out and the different technology and data involved in the journey is identified. This is a valuable step in creating a **positive patient and staff experience**, as it allows the identification of steps and interactions that the patients will have with the future hospital. For this project, four persona journey maps have been created, including two patient and two staff

Family Jones (Teulu Jones) personas

- Teulu Jones, the Jones Family, is our mid and west Wales family created during an early stage of our work on the strategy to test and challenge our ideas and models of health and care.
- It is not a real family, but we had real people living in our communities in mind when they were created.
- They have been designed using information about health and well-being across the Hywel Dda area and they are typical of many people in our population.
- There are seven family members, spanning each of the key life phases.
- We developed Teulu Jones to test what the different changes to our health and care system could mean for families living in our area.



Professional persona catalogue

Secondary Care	
Role	Priority
Consultant	
Junior Doctor	
Clinical Nurse Specialist	
Nurse	
Healthcare Support Worker	
Dietician	
Physio	
Therapist	
Site Navigator (Nurse)	
Site Manager (Nurse)	
Labs & Imaging	Yes
Support Services	
Pharmacist	Yes
Mental Health Practitioner	
Ward Clerk	Yes
Service Delivery Manager	

Community Care	
Role	Priority
GP	Yes
Practice Nurse	
Community Podiatrist	
District Nurse	Yes
Diabetic Nurse	
Pharmacist	
Occupational Therapist	Yes
Health Visitor	
Midwife	
School Nurse	
Mental Health Practitioner	
Pathway Coordinator	

Care (Other)	
Role	Priority
WAST	
First Responder	
Social Carer	
Domiciliary Carer	
Residential Home Carer	
Carer at Home	
Out of hours GP	

Mari Jones, age 78



Age: 78

Role: Citizen

Mari lives at home with Alun, her husband of 50 years.

She is a retired teacher and is former President of the local Women’s Institute which she still attends. She loves cooking, especially baking cakes.

In recent months, Mari has developed mild dementia and has become increasingly frail.

She is becoming more confused and has often been found wandering.

“I enjoy being active, meeting people and seeing the family when I can but sometimes I get confused and end up somewhere else.”

Regular activities

- Cooking and baking
- Seeing family, especially Sioned who acts as her carer
- Attending Women’s Institute
- Food and clothes shopping

Good looks like

- Living independently with Alun
- Being active, meeting people and seeing family, especially her great-grandchildren
- Being able to see her care team and consultant quickly and easily



Pain points & frustrations

- Getting confused from mild dementia
- Finding herself wandering outside the house
- Having to remember to tell Sioned when something goes wrong
- Worrying about Alun’s heart
- Worrying about falling over

Digital solutions

- Easy to use medication reminders and requests for confirmation, via smart speaker or tablet
- Home sensors, and notifications to family, if Mari goes wandering
- Smart lighting if Mari gets up in the middle of the night
- Sensors to detect increasing frailty
- Signposting to social and cognitive activities to keep Mari’s brain active
- Sharing Mari’s care record and upcoming appointments with family
- Easy access to care information, and appointment reminders

General health and wellbeing



Attitude to health and wellbeing



Digital preference



Access to digital devices



Accessibility



Covid recovery



Dr Seren Morgan, age 43



Age: 43

Role: Emergency Dept Consultant

For Seren, the lack of resources and constant flow of patients means that a difficult job becomes a constant battle.

And there is no respite. Seren sees many patients who could have avoided the ED with the right care. People could have gone to the specialist fall centre, or they ignore symptoms or miss screening appointments. Seren has symptoms of extreme stress and PTSD but is too busy to speak to anyone: other people need her more.

"I chose this career because I wanted to make the most difference to the most people. And in the emergency department we see 100's of patients a day!"

Regular activities

- Leading in ensuring the right team, equipment and medication is provided to each patient.
- Assessing patients.
- Treating patients: from minor injury to emergency surgery.
- Updating families and carers on findings and outlook for patients.
- Training and supporting junior doctors.

Good looks like

- High quality care and experience for patients and circle of care
- Support for staff wellbeing, work-life balance, research, recruitment and retention.
- Less burden on frontline staff where tech is easy-to-use and lessens paperwork and admin.
- Reliable real-time decision making with real data.
- More meaningful work, more time with patients.
- Good food and a good night out!

Pain points & frustrations

- Not having the right information and tools to deliver the best service
- Not knowing what happened in community and GPs, and vice versa
- Not enough time with patients or to support junior doctors.
- Patients who should have been treated elsewhere or earlier.
- Workforce and staff sickness.
- Not knowing what happens to patients after they leave the ED.

Digital solutions

- Real time medical dashboard.
- Integrated citizen health and care record
- Information hub to improve decision making across the ecosystem.
- User-centred and integrated systems.
- Better signposting of care services.
- Electronic observations
- Easy system login, single sign-on
- Quick and responsive systems
- Patient flow including internal referrals in hospitals
- Remote monitoring and virtual wards
- Actionable insights

General health and wellbeing



Attitude to health and wellbeing



Digital preference



Access to digital devices



Accessibility



Covid recovery



Pathway Journey Guide

A Pathway Journey shows how a particular pathway currently operates from a patient's perspective

Pathway name

Frailty Journey: Mari

Persona name



Persona picture

Mari Jones is 78 and lives at home with husband Alun. She is a retired teacher and attends the local Women's Institute. Mari has recently developed mild dementia and become increasingly frail. She has often been confused and found wandering.

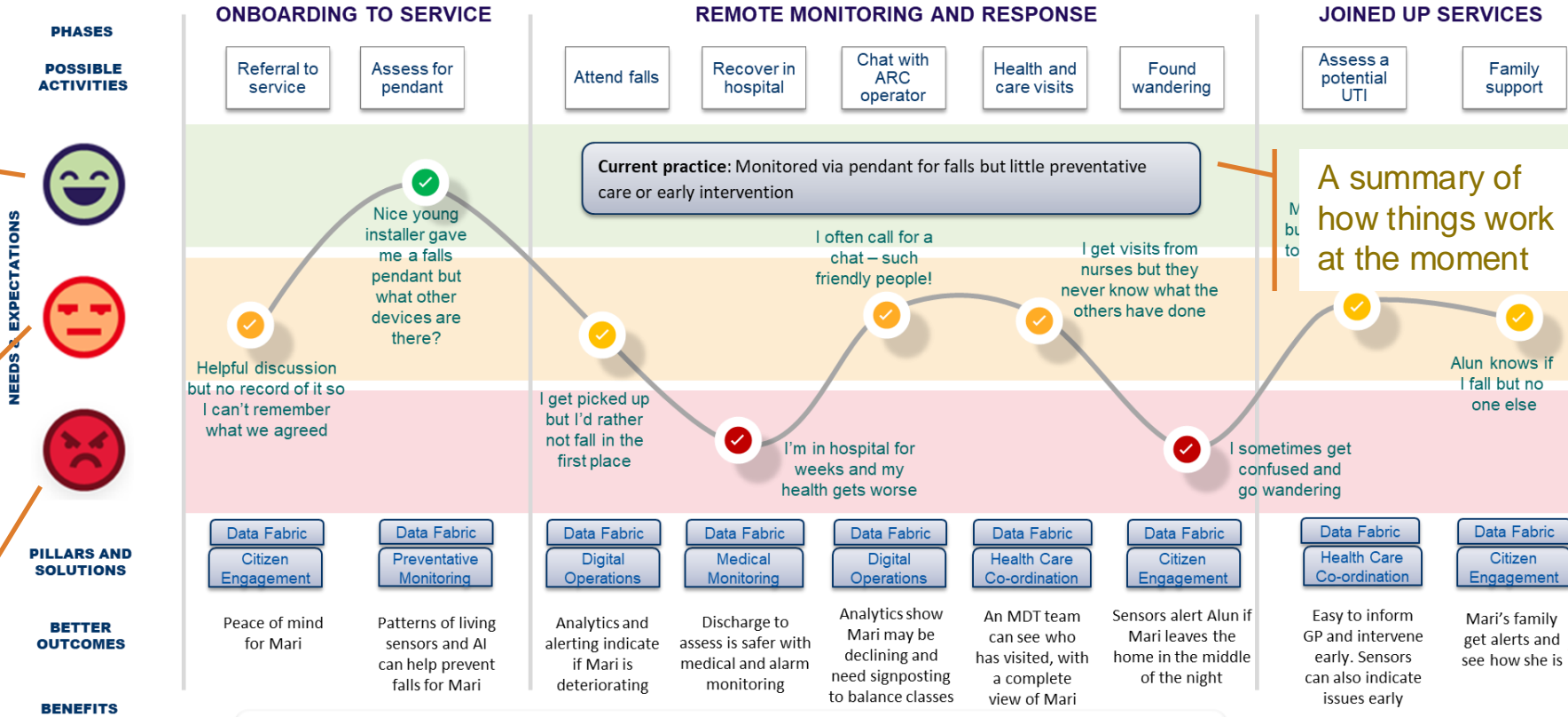
Persona background

Key Pathway phases

Green row: descriptions of things that are going well

Amber row: descriptions of things that are not going well

Red row: descriptions of things that are going badly



Key patient activities (not necessarily in order)

The wavy line shows the emotions felt by the patient

IT solutions that can make things better

How things would be better with new IT

Benefits or references

Benefits from the [Whole System Demonstrator findings](#), Dept of Health Dec 2011

Frailty Journey: Mari



Mari Jones is 78 and lives at home with husband Alun. She is a retired teacher and attends the local Women's Institute. Mari has recently developed mild dementia and become increasingly frail. She has often been confused and found wandering.

PHASES
POSSIBLE ACTIVITIES

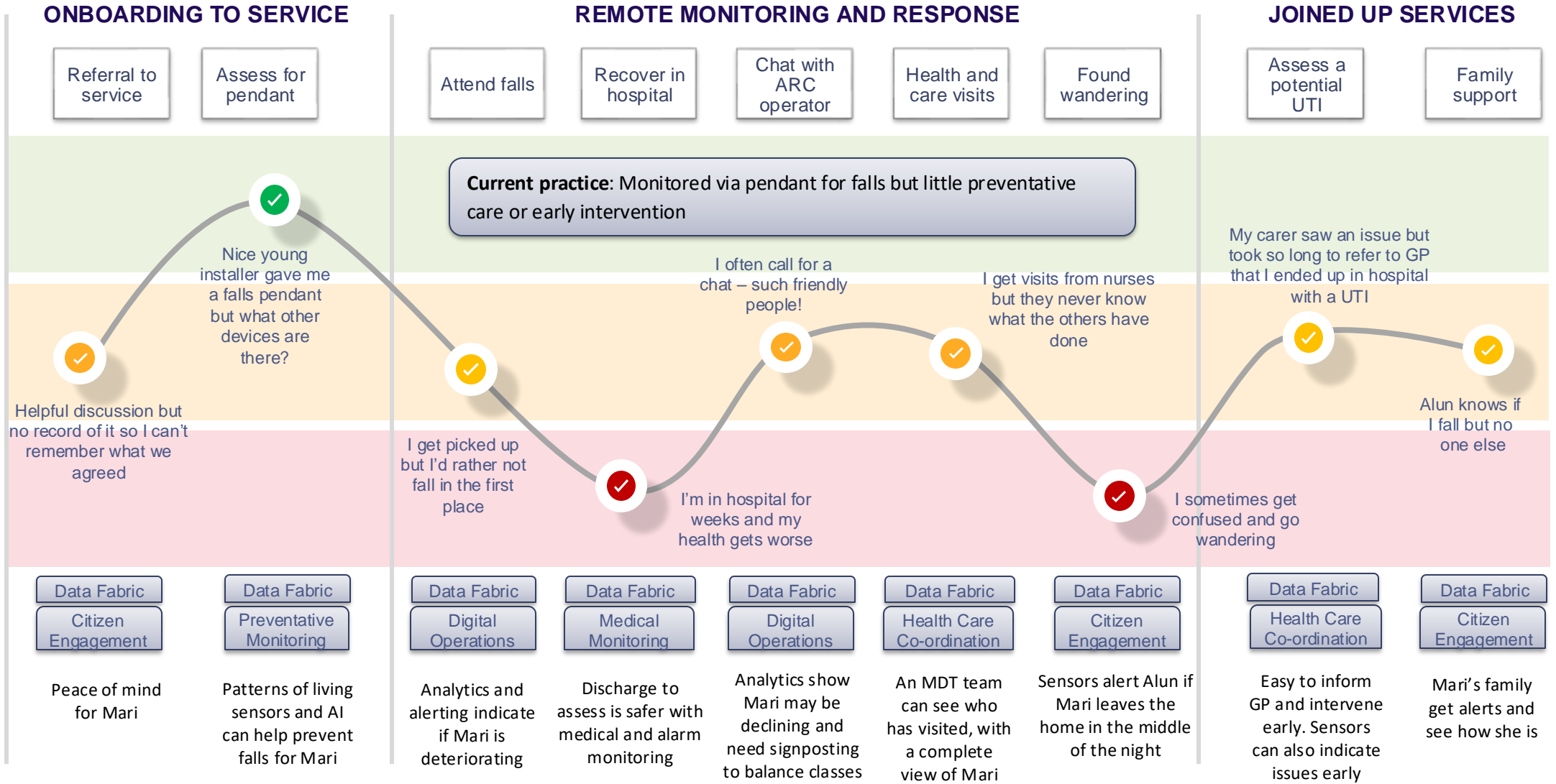
NEEDS & EXPECTATIONS



PILLARS AND SOLUTIONS

BETTER OUTCOMES

BENEFITS AND REFERENCES

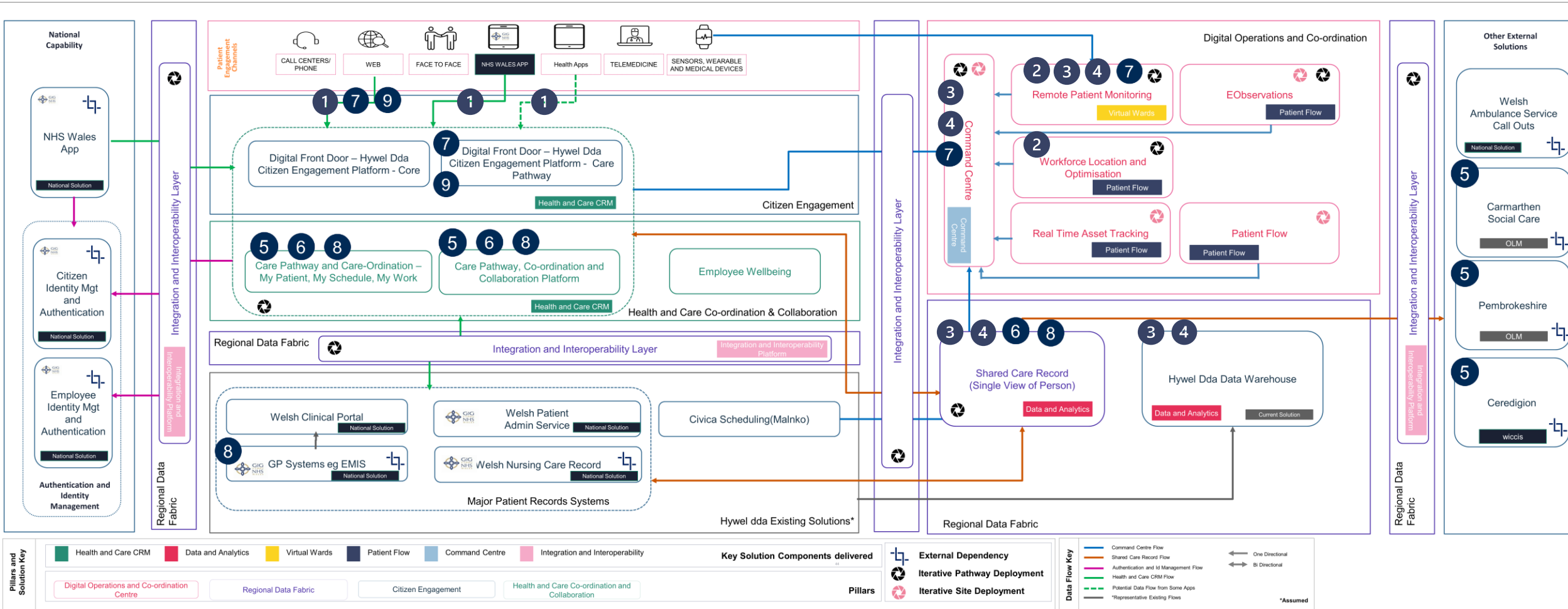


15% reduction in A&E visits
 20% reduction in emergency admissions
 14% reduction in elective admissions
 14% reduction in bed days
 8% reduction in tariff costs
 45% reduction in mortality rates

Frailty Journey Architecture Mapping



Mari Jones is 78 and lives at home with husband Alun. She is a retired teacher and attends the local Women's Institute. Mari has recently developed mild dementia and become increasingly frail. She has often been confused and found wandering.



- 1 Pathway Journey activities**
- 1 Referral to service
 - 2 Assess and wear devices
 - 3 Prevent or attend falls
 - 4 Recover in hospital and home
 - 5 Chat with ARC operator
 - 6 Health and care visits
 - 7 Found wandering
 - 8 Assess a potential UTI
 - 9 Family support



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Leveraging Data, and Applications for Delivery:

Data Strategy – Key Emerging Themes



Pathway view of data

Explore how we use our data to show an end-to-end pathway view of our services. This could incorporate outcomes, productivity, variance, quality and safety.



Data to support strategy / planning

Need to ensure that our data helps provide evidence to determine whether we are delivering the plan, strategic objectives and evidence change.

We need a better way of visualising demand and capacity, and this will help inform future service provision. Helpful to have functionality to model out scenarios to help inform planning.



Triangulation

Use data to help identify areas for potential harm.



Population health

Need easy access to overall population health data and needs assessment to help inform policy.



Planned Care

Need to consider how we use data to visualise productivity issues and variance.



Public

Need to consider how we share information with the public / patients such as their position on waiting lists



Clinical view

Better clinical data can help inform / transform pathways and improve patient care: *'When we create the tools to digital deliver care, this data can be used in real time to create the clinical and business intelligence for clinicians to do things differently and better!'*



Access to Data

Need simple and easy ways to access the data and dashboards. Need to simplify the data & dashboards we currently have and ensure that it helps to support day to day operations. Need to promote what is there and bring it to life through videos and raising awareness at key forums.



Data Quality

Need to promote the importance of accurate data collection, and show the impact that data has. Establish a kite mark – so that people using the data know if it has come from our data warehouse and it can be verified



Capacity and capability

Analysts: Need to be clear on the skills we have across the system and how people can access support. Need to consider how we build and grow the skills of the analysts across the whole system.



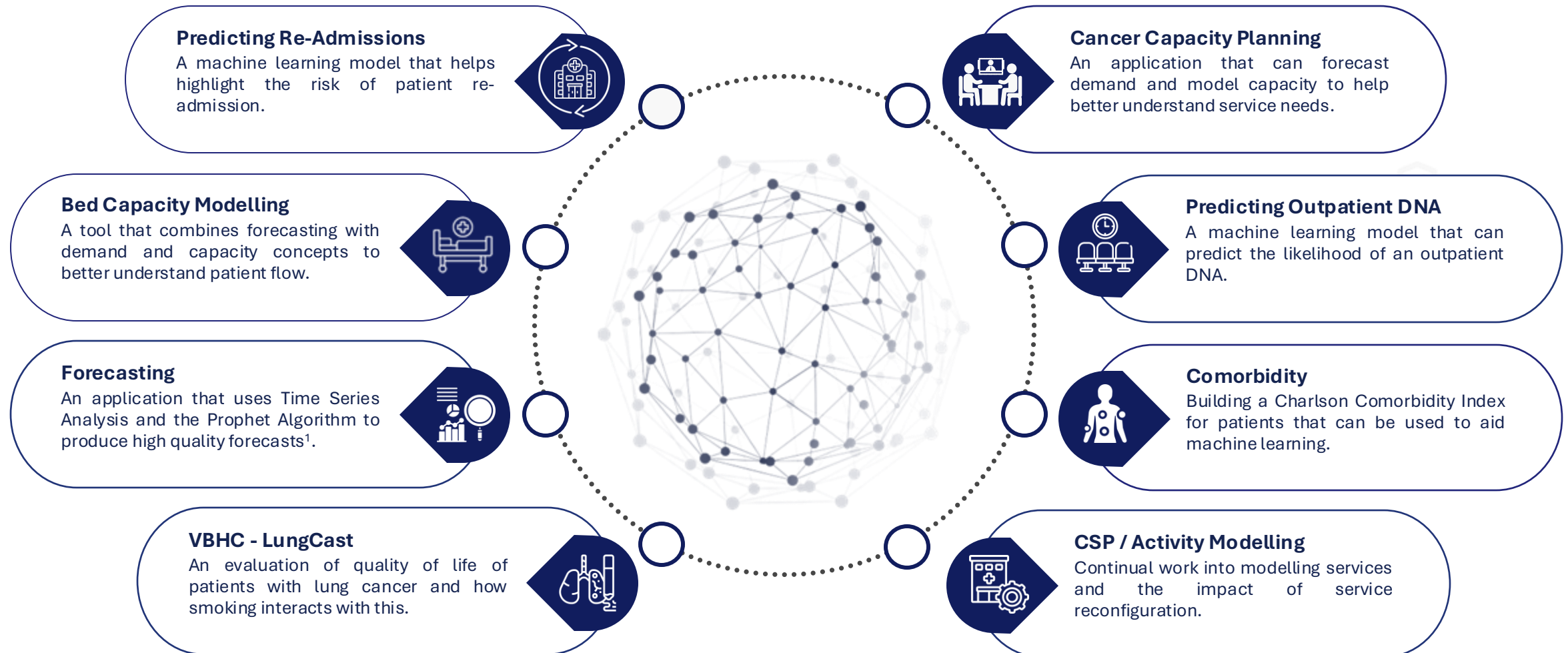
Generic skills: Need to improve data literacy and confidence across the workforce.

AI

Need to explore the art of the possible, what can it do to help professions. Need way of keeping informed about emergent thinking.

Emerging issues:

- Culture: data and analytic capabilities are siloed in some areas which impacts on skill development and peer support.
- Primary and community data is currently a gap.
- Data should be seen as a health board asset.
- Need more trust and use of data, ownership and accountability.
- Need to consider how to achieve 'approved data sources'



University Partnerships



Joint Post

Hywel Dda and Aberystwyth University support a joint post in Health Data Science. This unique and innovative approach embeds cutting edge academic skills within the Health Board.

Dr Praboda Rajapaksha² has significant expertise in AI and Data Science and is currently developing a patient / digital twin framework for Hywel Dda. A first for NHS Wales.

PhD Student

Hywel Dda is sponsoring a PhD student in Swansea University via a partnership to enhance human interaction via data driven systems³.

Megan Morgan is building upon the forecasting work already in Hywel Dda. She is researching whether it is possible to predict the likely categories/presentations arriving at ED

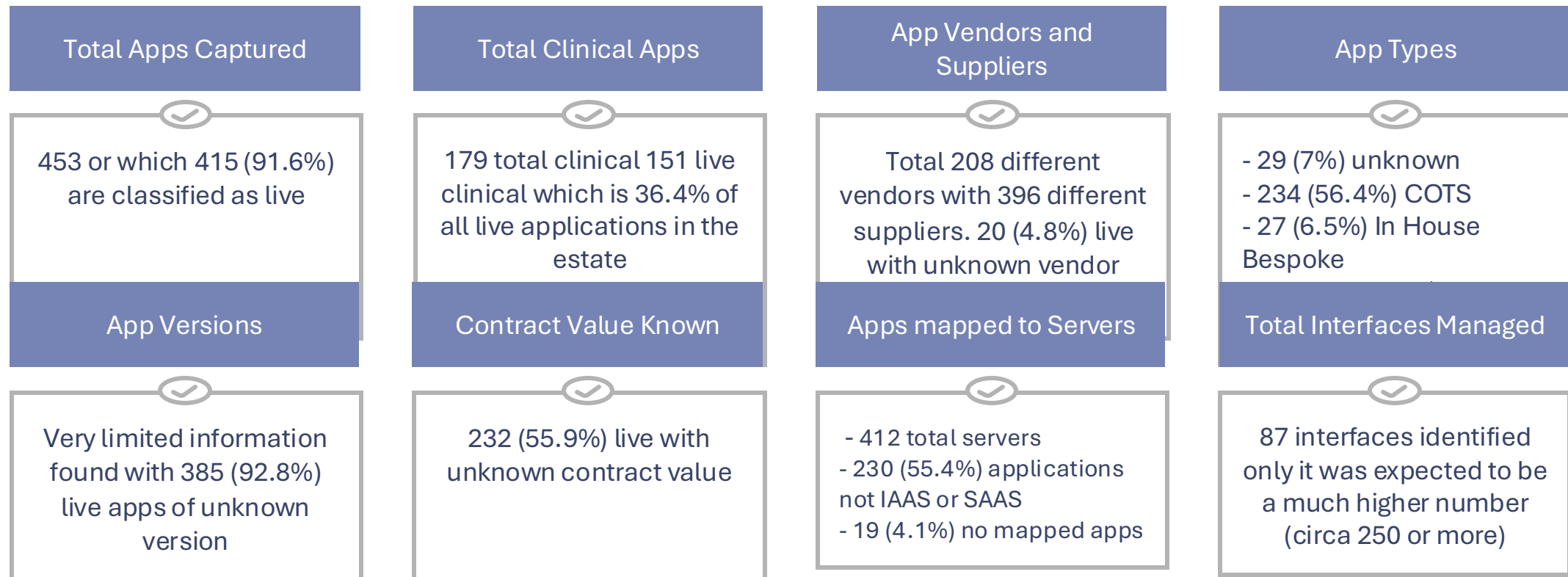
Collaboration

Working with all the local universities has fostered many connections enabling the potential for mutual benefit.

Digital Service and the Data Science Team are recognised as being progressive and innovative in the field of data science. Through these connections Hywel Dda is participating in an AI Impact collaboration with multiple universities and Health Boards⁴.

Application Rationalisation – Shadow IT

We have undertaken an applications portfolio data gathering and analysis of our current digital estate. We have gathered information on circa 400 applications across Hywel Dda University Health Board – there are significant organisational gaps in data collection in some areas that have prevented a full-scale analysis.



Applications analysis: overview

RISK

- Data gaps indicate currency of the applications estate is not actively managed
- Interdependencies are not clear so risks around ability to fully assess change
- May be residual areas of clinical risk although clinical apps are better understood

TECHNOLOGY

- Apps upgrade runway not clear
- No alignment to app or server EoL and support
- Apps not used to full potential
- Poor resilience with unknown overall portfolio



COST

- Full cost of digital estate may not be known from a legacy perspective
- Significant risk of project and change deployment issues – driving increased cost to change – because estate is not fully documented
- Licensing compliance may be a cost risk

STRATEGY

- Challenging to effectively plan and achieve change
- Difficult to understand impact of strategic decision making
- Opportunities through business engagement and change to manage down the estate
- Opportunities to manage estate through regular horizon scanning and planning once data set complete