

Meeting Date	30 January 2020	Agenda Item	3.2	
Report Title	Digital Services : Enabling Transformation and the Organisation Strategy an Update on Progress and Plans			
Report Author	Sian Richards, Deputy Chief Digital Officer & Gareth Westlake, Digital Services Business Manager.			
Report Sponsor	Matthew John, Associate Director of Digital Services / Chief Digital Officer			
Presented by	Matthew John, Associate Director of Digital Services / Chief Digital Officer			
Freedom of Information	Open			
Purpose of the Report	The paper provides an update on the Swansea Bay (SBUHB) digital transformation journey, supported by a comprehensive report, to ensure Board Members are informed of progress and plans, and to provide assurance that key issues are being addressed.			
Key Issues	<ul style="list-style-type: none"> • The benefits of investing in digital transformation capabilities and capacity and the progress and plans of the Digital Service Team. • The current and future challenges and risks of investment growth, organisational culture change and benefits delivery. • The changing national digital landscape in NHS Wales with the development of key digital roles in Welsh Government and the reconfiguration of NWIS. 			
Specific Action Required	Information	Discussion	Assurance	Approval
<i>(please choose one only)</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Recommendations	<p>Members are asked to:</p> <ul style="list-style-type: none"> • NOTE the projects and initiatives being progressed that are delivering digital transformation as a key enabler to the organisation's strategy and CSP • NOTE the challenges and risks in terms of investment growth and organisational culture change in order that the SBUHB can deliver maximum benefit from Digital Transformation • NOTE the changing Digital Landscape in NHS Wales and the significant part Swansea Bay Digital Leads are playing in supporting and influencing its direction and ultimate success • NOTE the intention to submit a Digital Services update paper to Board on a 4 monthly basis 			

DIGITAL SERVICES: ENABLING TRANSFORMATION AND THE ORGANISATION STRATEGY

1. INTRODUCTION

The paper and accompanying report aim to provide Health Board Members with an update on our digital transformation progress and plans. The purpose being to:

- demonstrate the accomplishments in SBUHB to enable digital healthcare and wellbeing over recent years;
- provide assurance that the digital delivery road map and strategic direction in SBUHB is aligned to and enables the Organisational Strategy and Clinical Service Plan;
- provide a baseline of the current digital plans and digital maturity and set out the areas of capability, capacity and risk that will need to be addressed to further digitally enable the organisation.

Whilst this paper provides an update across the broad range of digital service delivery, it is proposed that moving forward a paper is submitted on a more regular basis (4 monthly) with a focus on 1 or 2 of the 6 digital programme areas each time.

2. BACKGROUND

SBUHB organisational strategy 'Better health, better care, better lives' states that the organisation will maximise digital opportunities and use it to transform how people's health is improved and how care is delivered. The Health Board envisages that health, care and wellbeing activities carried out by everyone in our Health Board will be enabled using digital technology wherever optimal including ensuring care, quality and service plans and operations are data driven and maximise opportunities to improve efficiency and quality through use of digital technology.

Our Goals and Outcomes

The implementation of the vision will result in a number of outcomes for our patients, population and staff over the next three to ten years. These are detailed as follows:

Three Year Outcomes:

- By 2023, clinicians will have significantly more electronic information at the point of care, staff will utilise digital solutions and have the appropriate skills to do so, and care will be increasingly available through virtual means.
- By 2023, we will have established the foundations that will allow citizens and patients to engage with and manage their health and wellbeing and will have strengthened our population need based planning.

Five Year Outcomes:

- By 2025, all clinicians and staff will primarily use digital tools in all parts of their role supported by digital solutions and robust 24/7 support services.
- By 2025, patients and citizens will be empowered to manage their health and wellbeing through digital technology, and service planning will be digital first and data driven.

Ten Year Outcomes:

- By 2030, we expect digital care to be at the forefront of what we do. This means that we will ensure that any service change is enabled by a digital approach with the supporting training and skills to maximise the benefits.
- By 2030, we want people to be able to support their own health and wellbeing through maximising the use of digital technology. This means that people will be able to use the latest technology, in partnership with us, to maintain their own health and respond to their health needs.

Assessment of Maturity

To achieve these outcomes the organisation will need to progress further in its digital maturity. The Healthcare Information and Management Systems Society (HIMSS) framework provides a simple guide to indicating the maturity of health and care systems within an organisation. There are a number of assessment areas, each have international standards that determines digital maturity in hospitals based on a score of 0 to 7.

Swansea Bay UHB have completed a self-assessment against the model and are currently scoring between 0 and 4 across the assessment areas. The digital plans that are in place will ensure further improvement and a higher score of digital maturity. This increase will require investment and a culture change in the organisation to ensure the highest levels of digital maturity In SBUHB.

Rebranding to Digital Services

As part of the new organisation restructure process, the Informatics Directorate took the opportunity to rebrand as “Digital Services”.

With the advancements in digital technology, the digital capabilities available to health go way beyond what we traditionally considered as Informatics. Organisations across the globe are more and more rebranding Informatics to Digital. “Digital Services” better describes the ambition of the Health Board and more appropriately encompasses the technology itself and the physical and human factors both internally and externally that we need to focus on to achieve digitally enabled transformation.

National Context

The Welsh Government’s (WG) digital health and social care strategy ‘Informed Health and Social Care’ (2015) recognises the important role of technology in facilitating patient empowerment, health and wellbeing. Healthier Wales builds on this and sets out the importance of technology to support more integrated working between health and social care, focusing on the patient at the centre of the integrated team.

Nationally in 2020 will see the beginning of a number of positive changes to the Digital landscape and governance models in NHS Wales. The principles of open architecture, open platform and open standards will start to be embedded, supported by increased investment of £50m for digital priorities. There will be a new Chief Digital Officer that will sit in the NHS Executive and have a "whole system" remit. There will also be a reformation of NWIS as it becomes a Strategic Health Authority. This will give it equal status as a peer within the NHS and greater accountability, both to WG and to its own Board of Members. These external factors should all result in positive changes to

advance the digital agenda in NHS Wales. SBUHB Digital Services will continue to be supportive, collaborative and influential at the national level to deliver the digital aspirations for NHS Wales and ensure Swansea Bay UHB is leading the way.

Achievement and Plans

The Health Board has established 5 Digital Transformation Programmes of work to deliver change and a number of essential Digital Enabling Programmes to support delivery. Each programme area will work to digitally enable care, health and well-being. There has been significant progress and success in each of the areas.

Patient and Citizen Empowerment

Enabling the citizen to take responsibility and play an active role in their care is critical to the delivery of sustainable NHS services. Allowing citizens to manage their condition themselves through the co-development of condition-customised care programmes, access to self-help resources, virtual health coaching and monitoring of health status and outcomes, will promote self-management and lead to improved patient outcomes. Key projects in this space are:

- **The Swansea Bay Patient Portal** - a digital tool that provides our citizens with access to their own care records, enabling them to capture and share their own health and care data. With 1500 patients and staff already registered, over the next three years Swansea Bay Patient Portal will be rolled out across the population and to more clinical specialties across the Health Board.
- **Patient Reported Outcome Measures (PROMs)** is a mechanism to capture patient information and outcomes. The benefit of collecting PROMs information across all of our services will be the use of analytics and data to improve care provision and outcomes, as well as service design and transformation. A number of services are already collecting PROMS with their patients. Over the next 3 years, SBUHB will continue to rollout the most appropriate solution(s) with which to enable our patients to easily record their outcomes, which in turn will create a rich data source for local and national benefit.

Hospital Patient Safety and Flow

Transforming the patient's journey through the inpatient setting by providing clinicians with electronic systems and tools designed with the patient's care co-ordination and communication at the centre. Optimising inpatient flow will improve the safety and quality of care for our patients and ensure better outcomes by reducing the harm, waste and clinical variation inherent in current paper based systems. Key projects in this space are:

- **E-Whiteboard Solution (Signal)** - An in house developed system that replaces physical whiteboards to ensure live information is available for every patient in our hospitals. The aim is to increase the visibility of the patient pathway, supporting better patient flow and safety. The solution is already implemented across Singleton wards and is currently being rolled out across Morriston. In 20/21 we will continue to maximise the use and benefits from live electronic information captured on the wards.
- **Welsh Clinical Portal (WCP)** - The Welsh Clinical Portal is a view of patient information from a number of computer systems and databases in use in Wales.

WCP allows clinicians to order tests and view results from across Wales and is a growing source of electronic information required to assess and treat patients. The system is already implemented across the HB and in 2020/21 we will continue to maximise the use of electronic test requesting (ETR) which will be supported by the introduction of a phlebotomy workflow application. Following 2020/21 the focus will shift to ETR for radiology. We will also continue our progression towards a paper light Outpatients department.

- **Hospital Electronic Prescribing and Medicines Administration (HEPMA)** – SBUHB is the first Health Board in Wales to introduce Hospital Electronic Prescribing and Medicines Management (HEPMA). HEPMA will be implemented across inpatient wards at Neath Port Talbot and Singleton by the end of Q2 of 2020/21. The solution will provide a range of significant clinical safety benefits associated with the prescribing and administering of medicines.

Integrated Health and Care

This programme is about enabling staff across Secondary care, Primary Care, Community, Mental Health, Learning Disabilities, Social Care and other partners to be able to share information knowledge and expertise. Key projects in this programme are:

- **Welsh Community Care Information System (WCCIS)** - The Welsh Community Care Information System (WCCIS) is an electronic information sharing platform designed to deliver improved care and support for people across Health and Social Care in Wales. Planning and engagement is underway on a regional basis. A full business case will be submitted to SBUHB Investment and Benefits Group in Q4 of 2019/20. By the end of 2020/21 we aim to have rolled out WCCIS to 1,200 of our community staff. The remaining 2,300 users of the system are expected to become online over the following 2 years in a phased approach.

Streamlining Business Processes Progress and Plans

Enabling staff across the Health Board to reduce the time spent on administrative processes, providing more time for value added activities. This ranges across all clinical and administrative functions of the Health Board. Key progress areas and plans are presented below.

- **Heath Records Modernisation** - RFID tagging of acute records, Location Based Filing using barcode scanning and identification of patients' record locations via fixed sensors. The RFID tagging solution was successfully implemented across all health records libraries in November 2019 to improve effectiveness and efficiencies of records provision. The saving profiled in the Welsh Government invest to save scheme will be released in 2020/21.
- **Microsoft Office 365** - NHS Wales confirmed a new national agreement with Microsoft in June 2019 for the implementation of Office 365. The collaboration and remote working tools offered by Office 365 will provide a number of opportunities for existing processes to be improved and streamlined. SBUHB has established its local programme and is currently working up a prioritised plan of delivery for 2020/21.

Business Intelligence and Analytics

Enabling the utilisation of the data we capture within our digital solutions to support evidence based decision making is key. During the period SBUHB will be accelerating the use of business intelligence with the launch of a BI and Analytics strategy. A draft plan is currently in development and will be released in Quarter 4 of 2019/20, outlining both the approach and the infrastructure required to deliver excellent Business Intelligence and Analytics across Swansea Bay over the next 5 years.

Digital Enabler Programmes

Digital transformation cannot be realised without firm digital foundations. Clinicians are becoming more and more reliant on digital solutions to facilitate the provision of high quality care and this dependency will only increase. SBU are therefore focussing on ensuring our digital services are resilient and secure with comprehensive work plans in areas such as: Information Governance; Cyber Security; Mobilisation and devices; and Digital Infrastructure and Cloud.

3. GOVERNANCE AND RISK ISSUES

Capability and Capacity

The Health Board have been successful in the implementation and adoption of national and local digital solutions. This has led to a strengthening of Digital infrastructure including the increase in access to devices. The provision and support of Digital services has therefore grown significantly over the last 4 to 5 years. E.g. The number of supported devices has increased by nearly 50%.

The dependency and growth of digital solutions is therefore going to continue to grow and in the short to medium term growth should accelerate. This increased reliance from clinical services will also mean that IT service models will have to be reviewed to encompass support over 24/7 periods. Over recent years we have been able to secure non recurrent funds to support digital projects and the HB has committed recurrent capital investment to support the implementation of new projects.

Digital transformation is only effective if it results in real business change and we need to ensure that our teams have the skills and capacity to be able to support the organisation to leverage digital tools to effect real change in the ways in which our services are delivered. The pace of change within Digital is great and we need to ensure our Digital staff have access to the training and professional development opportunities to ensure they are able to support the drive for transformation. The HB needs to ensure that it is able to offer people attractive careers in supporting us to achieve this transformation.

We are working with the national Health Informatics Workforce Strategy and Implementation Group to identify a strategic approach to the maintaining and increase the digital workforce in NHS Wales. We recognise however the need to develop a comprehensive workforce plan for our Digital services to address the issues with recruitment and retention of staff within the team.

Business and Cultural change is essential to achieving digital transformation. This change cannot take place without the wider workforce (and our citizens) being able to embrace the tools we will be able to provide them. The organisation will be working closely with HEIW in the execution of the national workforce strategy which includes a focus on “the digital workforce”.

Governance

Considerable work has been ongoing to strengthen the internal governance model of Digital in SBUHB and to ensure that it is aligned organisational structures and priorities including the CSP.

All Digital Groups / Boards report via the Senior Leadership or the Transformational Portfolio Board then onto the Executive Team and Audit Committee. Underpinning these groups are Service Delivery Unit (SDU) Digital Groups have been established to ensure SDU clinical and business requirements are fully understood and prioritised appropriately. Over the last 12 months Digital Services have established a robust inclusive approach to informatics prioritisation that informs our local plans and feeds into IBG and the national prioritisation process.

Risks

There are a number of risks that have been identified within the Digital Services risk register that are being managed to ensure ongoing delivery of the Digital vision of the Health Board. These are 5 risks associated with Digital Services on the Health Board Risk Register. These risks are all overseen by the Audit committee and a paper focussing specifically on these digital risk is being presented at the meeting in March.

4. FINANCIAL IMPLICATIONS

Digital transformation requires significant investment to achieve the long term benefits. Recommendations from local audits, in addition to the WAO review, indicate the need for a robust investment plan for sustained delivery of benefits through digital adoption.

Based on the 2018/19 funding position, the Digital Services revenue budget (excluding Health Records/Coding) was £7.6m. The revenue budget was subsidised by committed discretionary capital of £0.9m for the delivery of projects. This total of £8.5m equates to 0.73% of the Health Boards 2018/19 revenue budget. Experts advise that organisational spend on Informatics should be in the region of 3-5%.

As well as the recurrent commitment from the Health Board, Digital services have pursued and received non recurrent funding from WG for investment in digital services. This year we have secured an additional £1.390m capital and £0.985m revenue for investment in infrastructure and cybersecurity from the Digital Transformation Fund. The Digital Transformation Fund is a £50m Transformation Fund for the NHS in Wales. The Health Board will continue to pursue these opportunities.

The success in the growth in digital services also means that we need to plan for the refresh of the investments made in recent years. The life span of digital hardware is, on average, 5 years and the replacement of this hardware will need to be managed to

mitigate the risk of failing and unsupported infrastructure. Working closely with Capital planning teams will be essential.

5. RECOMMENDATIONS

Members are asked to:

- **NOTE** the projects and initiatives being progressed that are delivering digital transformation as a key enabler to the organisation's strategy and CSP
- **NOTE** the challenges and risks in terms of investment growth and organisational culture change in order that the SBUHB can deliver maximum benefit from Digital Transformation
- **NOTE** the changing Digital Landscape in NHS Wales and the significant part Swansea Bay Digital Leads are playing in supporting and influencing its direction and ultimate success
- **NOTE** the intention to submit a Digital Services update paper to Board on a 4 monthly basis

Governance and Assurance		
Link to Enabling Objectives (please choose)	Supporting better health and wellbeing by actively promoting and empowering people to live well in resilient communities	
	Partnerships for Improving Health and Wellbeing	<input checked="" type="checkbox"/>
	Co-Production and Health Literacy	<input checked="" type="checkbox"/>
	Digitally Enabled Health and Wellbeing	<input checked="" type="checkbox"/>
	Deliver better care through excellent health and care services achieving the outcomes that matter most to people	
	Best Value Outcomes and High Quality Care	<input checked="" type="checkbox"/>
	Partnerships for Care	<input checked="" type="checkbox"/>
	Excellent Staff	<input checked="" type="checkbox"/>
	Digitally Enabled Care	<input checked="" type="checkbox"/>
	Outstanding Research, Innovation, Education and Learning	<input type="checkbox"/>
Health and Care Standards		
(please choose)	Staying Healthy	<input checked="" type="checkbox"/>
	Safe Care	<input checked="" type="checkbox"/>
	Effective Care	<input checked="" type="checkbox"/>
	Dignified Care	<input type="checkbox"/>
	Timely Care	<input checked="" type="checkbox"/>
	Individual Care	<input checked="" type="checkbox"/>
	Staff and Resources	<input checked="" type="checkbox"/>
Quality, Safety and Patient Experience		
Implementation of digital systems in healthcare can have a significant positive impact on quality, safety and patient experience. Critical to success is the wide scale adoption of an effective business change model, digital service team capacity and capability, workforce digital skills and clinical leadership		
Financial Implications		
Increased investment will be required to achieve digital transformation, the detailed cases for investment will be brought via IMTP, IBG and Welsh Government.		

Legal Implications (including equality and diversity assessment)	
No known legal considerations. The implementation does ensure the Health Boards complies with Welsh Government digital inclusion strategic framework and the recommendations of 'Digital Inclusion in Health and Social Care	
Staffing Implications	
Increasing numbers staff will be required to deliver the digital change programme in SBUHB. This will be detailed in the IMPT workforce plan, individual business cases and the digital priorities and plans.	
Report History	The paper is a culmination of other individual progress reported to the Transformation Portfolio Board, Audit Committee, Investment and Benefits Group, Information Governance Group, Service Management Group, Senior Leadership Team and Executives.
Appendices	Digital Services Full Report



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DIGITAL SERVICES: ENABLING TRANSFORMATION AND THE ORGANISATION STRATEGY

1. Digital Vision in Swansea Bay

SBUHB organisational strategy 'Better health, better care, better lives' states that the organisation will maximise digital opportunities and use it to transform how people's health is improved and how care is delivered. This is reflected in the enabling objectives of delivering, digitally enabled health and wellbeing and digitally enabled care.

To deliver this digital goal SBUHB has an ambitious Digital Strategy, 'Destination Digital'. The aim of which is to ensure that health, care and wellbeing activities carried out by everyone in our health economy will, with pace and scalability, be enabled using digital technology.

The vision for digital services in SBUHB is to deliver digitally enabled world class health, care and well-being for our population. The aim is to achieve digitally enabled, health and wellbeing by utilising digital solutions to ensure that our citizens are supported to look after their own health and wellbeing, improving quality of life and longevity. It includes providing our citizens with information about their current state of health, the potential implications and risks they may face and the resources and access to expert advice that they may need to manage/avoid these.

Digitally enabled care is about ensuring that our clinicians and, staff have access to the information they need to manage the care of our patients when they require treatment. Information being available to patient will increase levels of co-production and self-care. This information will be available at the time it is needed, be accurate, complete, and comprehensible and support the decision making of the individual that requires it.

The Health Board envisages that health, care and wellbeing activities carried out by everyone in our Health Board will be enabled using digital technology wherever optimal including ensuring care, quality and service plans and operations are data driven and maximise opportunities to improve efficiency and quality through use of digital technology.

1.1 Our Goals and Outcomes

The implementation of the vision will result in a number of outcomes for our patients, population and staff over the next three to ten years. These are detailed as follows

Three Year Outcomes:

- By 2023, clinicians will have significantly more electronic information at the point of care, staff will utilise digital solutions and have the appropriate skills to do so, and care will be increasingly available through virtual means.
- By 2023, we will have established the foundations that will allow citizens and patients to engage with and manage their health and wellbeing and will have strengthened our population need based planning.

Five Year Outcomes:

- By 2025, all clinicians and staff will primarily use digital tools in all parts of their role supported by digital solutions and robust 24/7 support services.
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Ten Year Outcomes:

- By 2030, we expect digital care to be at the forefront of what we do. This means that we will ensure that any service change is enabled by a digital approach with the supporting training and skills to maximise the benefits.
- By 2030, we want people to be able to support their own health and wellbeing through maximising the use of digital technology. This means that people will be able to use the latest technology, in partnership with us, to maintain their own health and respond to their health needs.

1.2 Assessment of Maturity

To achieve these outcomes the organisation will need to progress further in its digital maturity. The digital maturity of an organisation can be assessed and monitored. The Healthcare Information and Management Systems Society (HIMSS) is a not-for-profit organisation focused on better health through information and technology. The HIMSS framework provides a simple guide to indicating the maturity of health and care systems within an organisation. The most advanced digital NHS organisation have achieved high levels of digital maturity (level 6/7), examples include Cambridge University Hospitals NHS Foundation Trust (Addenbrooks Hospital) which invested a £150m in digital capabilities to achieve this status.

There are a number of assessment areas, each have international standards that determines digital maturity in hospitals based on a score of 0 to 7. The higher the number, the further along an organisation is in its digital maturity in that area.

Swansea Bay UHB have completed a self-assessment against the model and are currently scoring between 0 and 4 across the assessment areas (see appendix 1). The digital plans that are in place will ensure further improvement and a higher score of digital maturity. This increase will require investment and a culture change in the organisation to ensure the highest levels of digital maturity In SBUHB.

2 Rebranding to Digital Services



As part of the new organisation restructure process, the Informatics Directorate took the opportunity to rebrand as “Digital Services”.

With the advancements in digital technology, the digital capabilities available to health go way beyond what we traditionally considered as Informatics. Organisations across the globe are more and more rebranding Informatics to Digital. “Digital Services” better describes the ambition of the Health Board and more appropriately encompasses the technology itself and the physical and human factors both internally and externally that we need to focus on to achieve digitally enabled transformation.

3 National Context

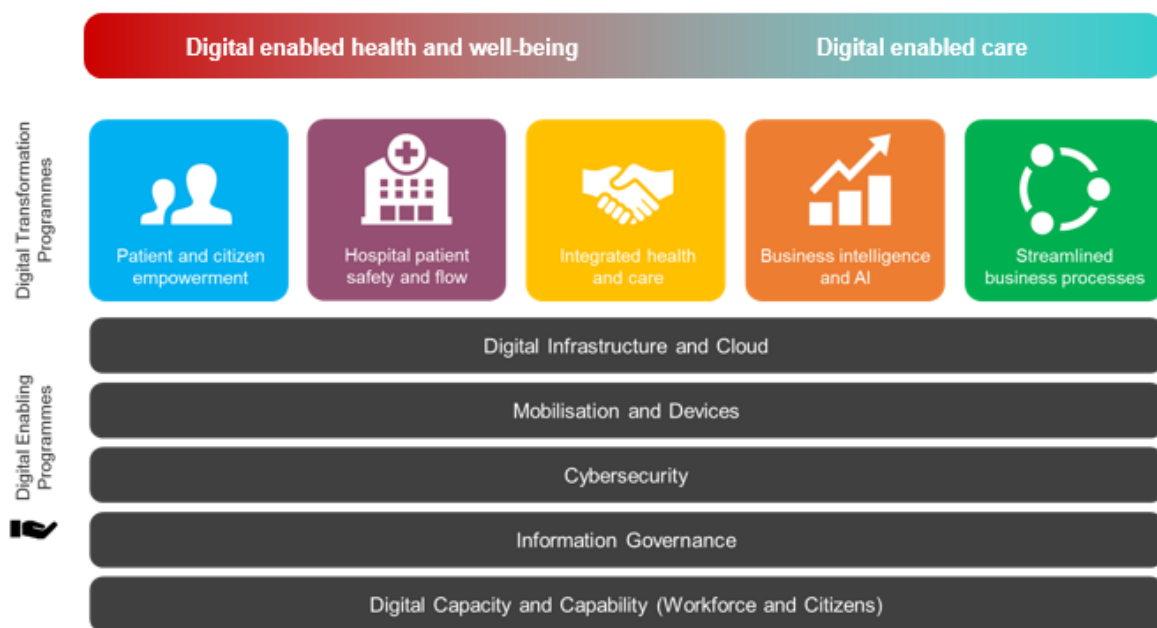
The Welsh Government’s (WG) digital health and social care strategy ‘Informed Health and Social Care’ (2015) recognises the important role of technology in facilitating patient empowerment, health and wellbeing. The strategy sets out a vision for the future use of technology in the delivery of effective and safe health and care in Wales in line with the principles of prudent healthcare and co-production. The Healthier Wales document published in June 2018 builds on this and sets out the importance of technology to support more integrated working between health and social care, focusing on the patient at the centre of the integrated team.

Nationally in 2020 will see the beginning of a number of positive changes to the Digital landscape and governance models in NHS Wales. The principles of open architecture, open platform and open standards will start to be embedded, supported by increased investment of £50m for digital priorities. There will be a new Chief Digital Officer that will sit in the NHS Executive and have a “whole system” remit. There will also be a reformation of NWIS as it becomes a Strategic Health Authority. This will give it equal status as a peer within the NHS and greater accountability, both to WG and to its own Board of Members. These external factors should all result in positive changes to advance the digital agenda in NHS Wales.

SBUHB Digital Services will continue to be supportive, collaborative and influential at the national level to deliver the digital aspirations for NHS Wales and ensure Swansea Bay UHB is leading the way. The SBUHB Chief Digital Officer (CDO) is currently the chair of the National Associate Directors of Informatics (ADIs) group and also co-chair of the Clinical Informatics Forum, which brings together clinical and non-clinical digital leaders across Wales. Furthermore, all of the members of the Digital Services Senior Team play active roles across a broad range of national digital groups and projects. The rebranding to Digital Services is also a clear statement of intent and national colleagues are taking notice.

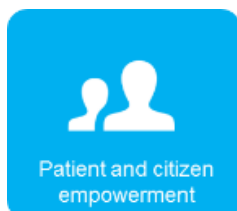
4 Achievement and Plans

The Health Board has established 5 Digital Transformation Programmes of work to deliver change and a number of essential Digital Enabling Programmes to support delivery. The digital transformation and enabling programmes are presented in the figure below.

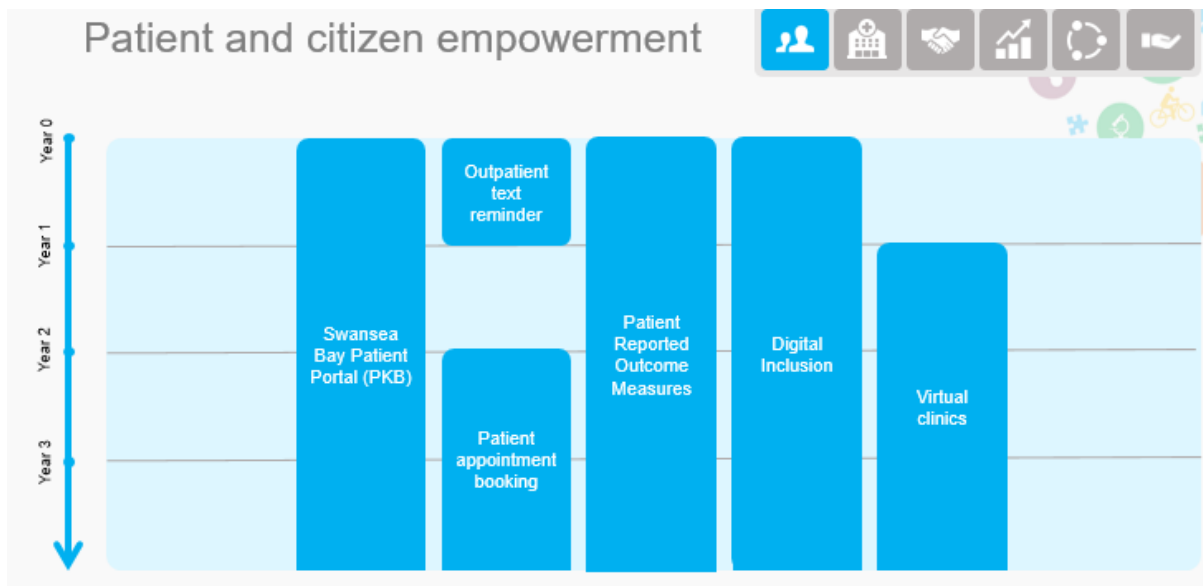


Each programme area will work to digitally enable care, health and well-being. There has been significant progress and success in each of the areas. A high level overview for each area is provided below.

4.1 Patient and Citizen Empowerment



Enabling the citizen to take responsibility and play an active role in their care is critical to the delivery of sustainable NHS services. Allowing citizens to manage their condition themselves through the co-development of condition-customised care programmes, access to self-help resources, virtual health coaching and monitoring of health status and outcomes, will empower patients and promote self-management, helping to reduce unnecessary follow up appointments. It is anticipated that this will improve patient outcomes and contribute to efficiency gains in the health and care services. Key progress areas and plans are presented below.



The Swansea Bay Patient Portal, is a digital tool that provides our citizens with access to their own care records, enabling them to capture and share their own health and care data, and to communicate with health and care services,

- 1151 patients and 277 staff members registered
- Example Benefit: Dermatology in Singleton have reduced follow-up appointments through virtual working with their systemic patients. By reducing their quarterly appointments to just 1 face to face appointment and three virtual reviews a year, with the 79 patients registered the team are looking to reduce their follow-up outpatient appointments by up to 237 a year.

Over the next three years Swansea Bay Patient Portal will be rolled out across the population and to more clinical specialties across the Health Board and introduce more functionality through the integration with national systems.

Patient Reported Outcome Measures (PROMs) is a mechanism to capture patient information and outcomes. The measures are often captured via questionnaires that patients are asked to complete before and after treatments to assess how they feel, from their own perspective. The benefit of collecting PROMs information across all of our services will be the use of analytics and data to improve care provision and outcomes, as well as service design and transformation. Clinical speciality that are making good progress in this area include:

- Cataract (patient response rate 50%),
- lung cancer (patient response rate 90%) and
- hip & knee replacement (patient response rate 60%)
- 5 heart failure community clinics commenced in December 2019 to assess best access models for patients

Over the next three years this is critical to the delivery of the Health Board's Value Based Healthcare Model (VBHc). SBUHB will continue to rollout the most appropriate solution(s) with which to enable our patients to easily record their outcomes, which in turn will create a rich data source for local and national benefit.

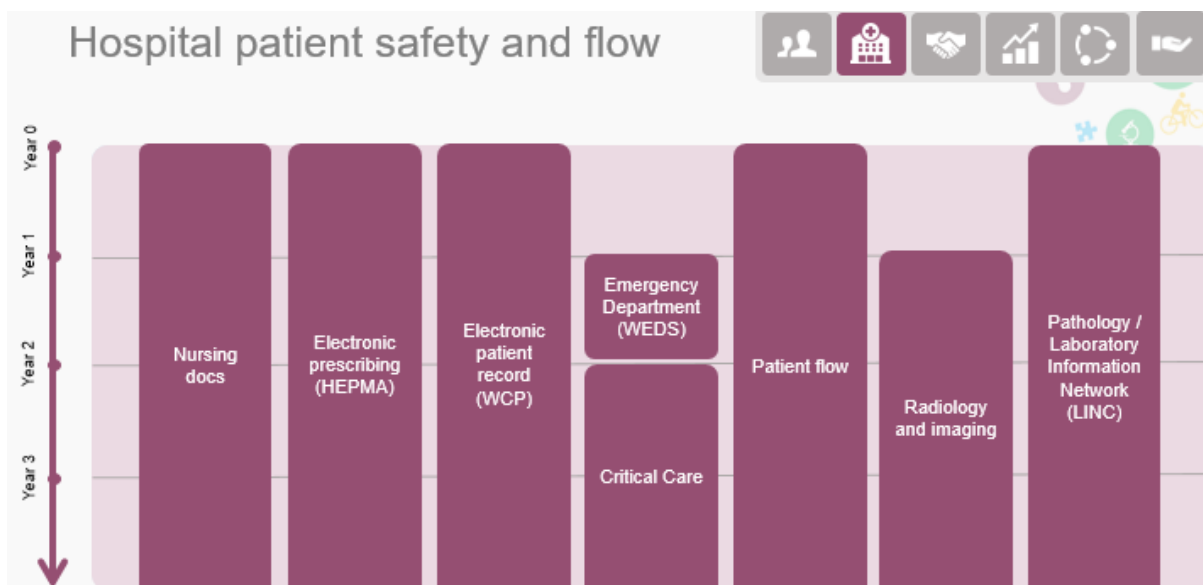
Virtual Clinics and Patient Interactions - This will include the introduction of video clinic appointments and the expansion of telephone led clinics and leverage the functionality within Swansea Bay Patient Portal. Patients will feel more supported and have greater access to clinical advice at a time that suits them.

Digital Inclusion – Improving digital literacy has been shown to have a significant impact on improving health outcomes for patients by helping them to take control of their health and care. Giving them skills to access the right information and services enables them to manage their conditions better as well as helping to relieve the burden on NHS services. SBUHB has established a collaborative working approach with Digital Communities Wales. A HB steering group has been established and a number of initiatives are being piloted with staff and patients across the organisation.

4.2 Hospital Patient Safety and Flow



Transforming the patient's journey through the inpatient setting by providing clinicians with electronic systems and tools designed with the patient's care co-ordination and communication at the centre. Optimising inpatient flow will improve the safety and quality of care for our patients and ensure better outcomes by reducing the harm, waste and clinical variation inherent in current paper based systems. Key progress areas and plans are presented below.



E-Whiteboard Solution (Signal) - An in house developed system that replaces physical whiteboards to ensure live information is available for every patient in our hospitals. The aim is to increase the visibility of the patient pathway, supporting better patient flow and safety. Progress to date includes:

- Implementation across Singleton complete
- Morriston implementation underway with completion in quarter 4 of 2019/20.
- Enabler for Hospital to Home supporting safe and more speedy transfer and discharge of patients

- Improves multidisciplinary team working as all members of the MDT are on the same system (previously used paper to make their notes), freeing up time to care
- Increased compliance of sepsis bundles
- Proactive management of infection control, allowing the infection control team to identify at a glance where the high risk patients are
- Created a strong visionary group of clinical digital champions

The learning from this implementation will be used to inform the National patient flow requirement and further roll out and functionality across the Health Board.

Welsh Clinical Portal (WCP) - The Welsh Clinical Portal is a view of patient information from a number of computer systems and databases in use in Wales. The collection of information provides healthcare staff access to a personalised workspace with their own patient lists. WCP allows clinicians to order tests and view results from across Wales and is a growing source of electronic information required to assess and treat patients. Progress to date includes:

- Electronic test requesting (ETR) live in 123 locations across the Health Board - ETR is supporting pathology improvement projects. E.g. 40% reduction in average time for full blood count results to be made available in the record (58 to 25 mins).
- All Wales view of pathology, cardiology and radiology diagnostic and clinical documentation. 8000 results from other HBs viewed per month. Therefore significant reduction in patients bled unnecessarily as clinicians are no longer required to contact other organisations/repeat tests where clinically-relevant results are available in the single patient record.
- Implementation of the WCP discharge summary (MTeD) has improved patient safety through more speedy transmission of discharge information to GPs. Compliance for patients discharged from general medicine wards has increased from 48% to 80%

In 2020/21 we will continue to maximise the use of electronic test requesting (ETR) which will be supported by the introduction of a phlebotomy workflow application. Following 2020/21 the focus will shift to ETR for radiology. We will also continue our progression towards a paper light Outpatients department.

Electronic Nursing Documentation - Digitisation of nursing documentation in order to reduce duplication, releasing more time for direct patient care. Swansea Bay have developed software on behalf of the National Programme and a pilot is planned for Q4. This is a fundamental element of delivering the digital ward.

In 2020/21 we will continue the implementation and development of the Nursing Documentation system across the Health Board.

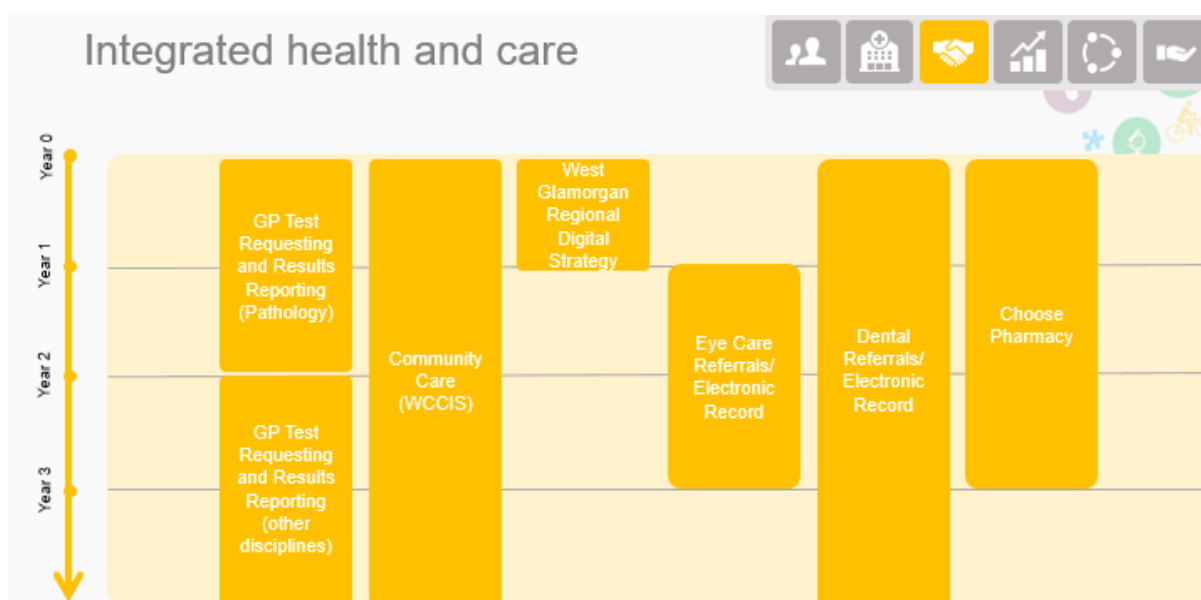
Hospital Electronic Prescribing and Medicines Administration (HEPMA) – SBUHB is the first Health Board in Wales to introduce Hospital Electronic Prescribing and Medicines Management (HEPMA). HEPMA will be implemented across inpatient wards at Neath Port Talbot and Singleton by the Q2 of 2020/21. The solution will provide a range of significant clinical safety benefits associated with the prescribing and administering of medicines.

Welsh Emergency Department System (WEDS) – WEDS is a new information system for the emergency departments and assessment units in SBUHB. Digital Services are working with NWIS towards a go live in 2020/21. The system will support the improvement programme in ED to deliver timely and efficient care and provide improved information for decision making and patient coordination.

4.3 Integrated Health and Care



This programme is about enabling staff across Secondary care, Primary Care, Community, Mental Health, Learning Disabilities, Social Care and other partners to be able to share information knowledge and expertise. This will facilitate SBUHB and our partners to transform the way we work together and pool resources to best support the health and wellbeing and care of our citizens. Key progress areas and plans are presented below.



Electronic Referrals - Sending of referrals from GP practices to secondary care and prioritisation electronically by Consultants. 100% of GP Practices in SBUHB can now send referrals electronically and 92% of those are prioritised electronically by clinicians. This has enabled departments to more efficiently process referrals e.g. Cardiology are now actioning e-referrals in 4 days compared with 13 days using the paper process.

Welsh Community Care Information System (WCCIS) - The Welsh Community Care Information System (WCCIS) is an electronic information sharing platform designed to deliver improved care and support for people across Health and Social Care in Wales. Planning and engagement is underway on a regional basis. A local readiness team has been established. A full business case will be submitted to SBUHB Investment and Benefits Group in Q3/Q4 of 2019/20.

By the end of 2020/21 we aim to have rolled out WCCIS to 1,200 of our community staff. 500 of these staff will be going live in alignment with our partners in Swansea Council with the remaining 700 being community nurses working across the health board. The remaining 2,300 users of the system are expected to become online over the following 2 years in a phased approach.

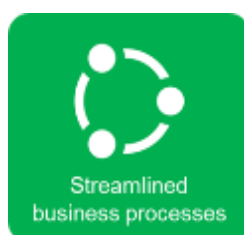
Mobilisation of Community staff - Following a highly successful community mobilisation programme, 100% of community staff (2400) have access to an iPad to improve patient care and work more efficiently. SBUHB Digital Service team, developed a mobile app for Health Visitors which supports the management of their caseloads, providing functionality to and outcome appointments at the point of care which has resulted in an additional 95 contacts per week

Optometry Electronic Record - Eye care digitisation is a programme of work to implement an electronic patient record for optometry patient that is integrated with other national solutions and systems. The system will support NHS Wales's strategic direction of providing appropriate care closer to home, supporting people to maintain their independence by reducing sight loss and the burden of blindness. SBUHB have been working closely with the national eye care programme and Hywel Dda UHB to establish a regional solution for our patients.

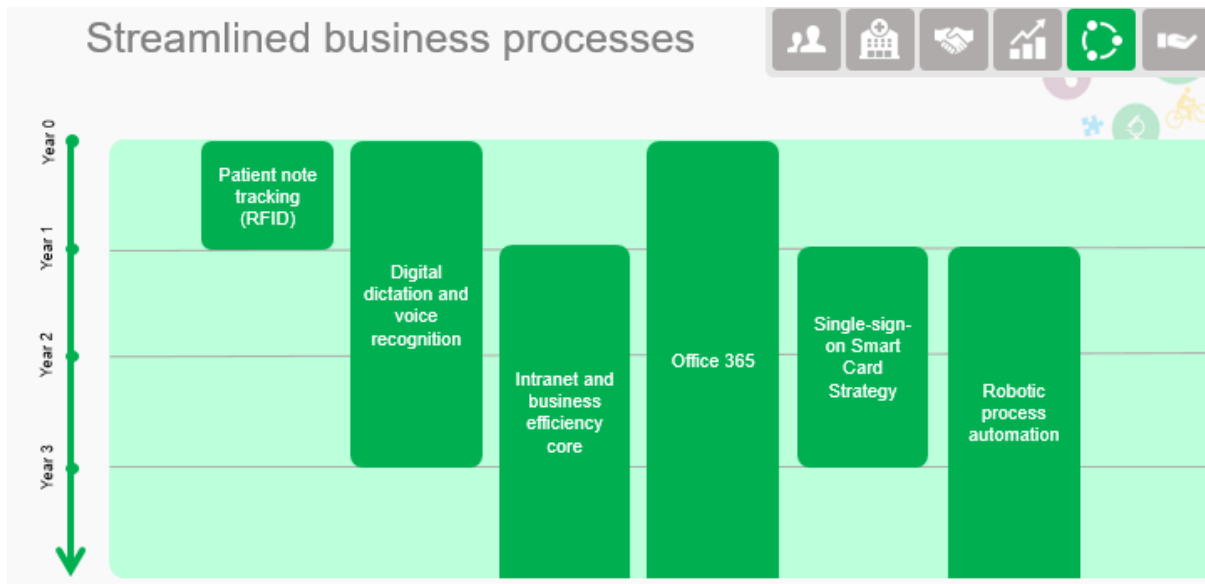
Dental Referrals/ Electronic Record - as with the requirement for service change within Eye Care, dental services need to work more closely between acute and community settings. This will be facilitated by a new dental referrals and electronic record system, and allow services to transform, to better meet the needs of the patient.

GP Test Requesting - From 2020/21 Digital Services will work closely with GPs to rollout the electronic requesting of test in primary care from secondary care. This will include close working with the laboratories to pilot new functionality to be made available in the Welsh Clinical Portal.

4.4 Streamlining Business Processes Progress and Plans



Enabling staff across the Health Board to reduce the time spent on administrative processes, providing more time for value added activities. This ranges across all clinical and administrative functions of the Health Board. Key progress areas and plans are presented below.



Heath Records Modernisation

RFID tagging of acute records, Location Based Filing using barcode scanning and identification of patients' record locations via fixed sensors. This will enable records to be easily tracked, located and made available when required. The RFID tagging solution was successfully implemented across all health records libraries in November 2019 to improve effectiveness and efficiencies of records provision. The saving profiled in the Welsh Government invest to save scheme will be released in 2020/21.

Microsoft Office 365

NHS Wales confirmed a new national agreement with Microsoft in June 2019 for the implementation of Office 365. O365 has numerous applications that we aim to exploit and is purpose built for efficient team working. The NHS can use the platform to increase its effectiveness, improve workforce productivity, drive quality and service improvement processes, and also improve the coordination, collaboration and communication of care. The collaboration and remote working tools offered by Office 365 will provide a number of opportunities for existing processes to be improved and streamlined. SBUHB has established its local programme and is currently working up a prioritised plan of delivery for 2020/21.

Digital Dictation and voice recognition - A robust benefits based business case to deliver a Health Board wide digital dictation strategy will be developed in 2020/21. The case will address administration capacity and efficiency constraints.

Single sign on Smart Card strategy – we will build on the work already completed in departments such as ED to develop a plan to provide integrated staff ID cards, “follow me” printing, access buildings and easy login to systems across the health board increasing efficiency and productivity.

4.5 Business Intelligence and Analytics



Enabling the utilisation of the data we capture within our digital solutions to support evidence based decision making is key. During the period SBUHB will be accelerating the use of business intelligence with the launch of a BI and Analytics strategy. The strategy will support the organisation to use bespoke analysis to help understand and predict demand and to make decisions on investment to inform local health strategy planning and will enable insightful and timely health intelligence. Key progress areas and plans are presented below.



Business Intelligence Strategy - Business Intelligence is a key part of the Health Board's Digital Strategy "Destination Digital" and is an essential element of the Health Board's Digital Transformation. Business Intelligence and advanced analytics are the methods and systems by which the organisation can answer healthcare related questions, pose new questions, learn, adapt, improve and gain actionable insights and intelligence. This will lead to better planning and decision making. A draft plan is currently in development and will be released in Quarter 4 of 2019/20, outlining both the approach and the infrastructure required to deliver excellent Business Intelligence and Analytics across Swansea Bay over the next 5 years.

National Data Resource (NDR) - The National Data Resource is aimed at improving the way data is collected, shared and used across health and care organisations. The programme is being led by NWIS with all organisations represented and SBUHB are fully engaged with colleagues to deliver a platform that will provide improved analytics capability through research and direct access to data that will enable better decision making for clinicians. Whilst this is a 10 year programme each health board has been allocated 2 data analysts to support the flow of data into the NDR, and work on this will start from February 2020.

Ward Dashboard - Acting as a key driver to ensure all wards have access to timely information to inform decision making and reduce risk, the Swansea Bay ward dashboard was rolled out to all Swansea Bay hospital sites over the course of 2019. The dashboard, developed in house by Swansea Bay Digital Intelligence, facilitates the Ward to Board concept by reporting on a range of key quality and safety indicators to each HB ward and is fully supported by the Quality and Safety Committee.

Clinical Trial Software, TRINETX - Fully supported and implemented the flow of datasets to Clinical Trial software, TRINETX, to support R&D Clinical Trials. This superseded the previous CLINITHINK software and the team received high praise for its work directly from the TRINETX and the R&D team. The software processes patient coded data to identify patients who may be suitable for clinical trials and there is continued dialogue with TRINETX to explore the adoption of the Natural Language Processing function within the software to allow for future data exploration opportunities.

Single Cancer Pathway (SCP) - Swansea Bay continue to support the work requirement to manage and report the Single Cancer Pathway. Key elements of this programme included an update to the WPAS TRACKER 7 module in 2019, and continued development of a dataset to ensure consistent and timely reporting of SCP activity and waiting times.

Surgical Services & Theatres Redesign Group (SSTRG) - The Digital Intelligence department have been working with the SSTRG resulting in new fully automated interactive views of theatres information being delivered to the desktop. The performance metrics, case level review and other pages have now been complimented by the new 6, 4, 2 page which allows managers and other users to measure the efficiency of the booking process. Users of the Dashboard can easily see the current booking status of theatres and any cancellation, empty sessions and reallocations as well as future sessions. This allows managers to more effectively manage the service and take action based on the dashboard outputs.

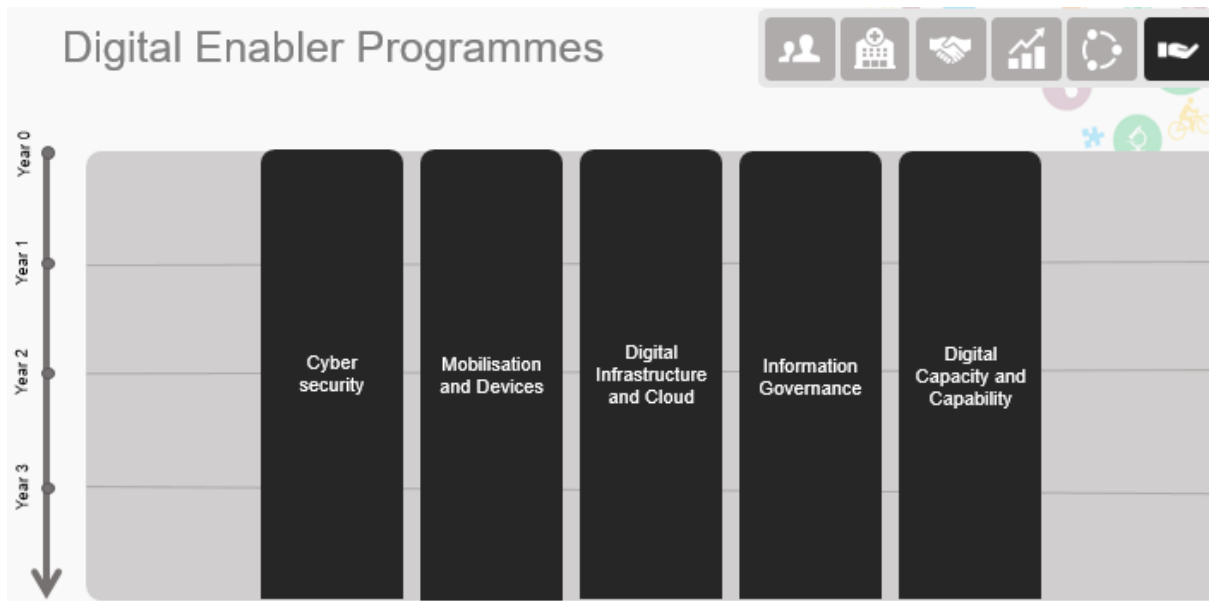
Dashboards and Business Intelligence Tools – Business Intelligence tools and Dashboards continue to be the way that information and intelligence is delivered across Swansea Bay HB. Going forward, there will be a focus on enhancing the work already undertaken to ensure the BI tools provide the information and analysis required by our strategy.

There will be a re-evaluation of the platform used to deliver this intelligence, currently QLIK, to discover the opportunity brought about by Office 365 and the intelligence toolkit that forms part of the suite, namely Power BI. Along with this approach will be a focus on predictive and prescriptive analytics (not just descriptive) which will include the opportunity to explore advanced modelling techniques via the integration of new technologies into our platform.

4.6 Digital Enabler Programmes



Digital transformation cannot be realised without firm digital foundations. Clinicians are becoming more and more reliant on digital solutions to facilitate the provision of high quality care and this dependency will only increase. SBU are therefore focussing on ensuring our digital services are resilient and secure. Key progress areas and plans are presented below.



Cyber Security - Cyber Security refers to the body of technologies, processes and practices designed to protect networks, devices, programs and data from attack, damage or unauthorised access. Cyber criminals actively attack healthcare organisations due to the importance of the data and resale value of the data. SBUHB is working with NWIS, WG and other Health Boards to ensure our defences are as strong as they can be. A key focus will be on the preparation and assessment for the implementation of the Network and Information Systems Directive (NISD).

Mobilisation and Devices - A key principle of our approach to digital is to ensure that our staff have access to the relevant information and are able to complete transactions in the right place and at the right time. Recent success have included

- Deployment of community devices as detailed above
- Replacement of antiquated bleep system with modern Cisco phones.
- Tracking in real time of medical equipment in Morriston
- Use of IPADs in Special Care baby unit for remote monitoring of babies when families are away from the hospital
- Remote access offered to staff to enable flexible working and improved recruitment of hard to source staff groups
- BYOD, 2200 active users to enable access to IT at right time and right place

SBUHB will build on the work that has already been done in this area and expand the use of mobile devices underpinning the use of a number of our digital solutions such as HEPMA, Nursing documentation and Patient Flow

Digital Infrastructure and Cloud - Robustness of our infrastructure is essential to the delivery of digital transformation. Areas of progress have included

- Pervasive WIFI network across all sites providing patient access to information and laying the foundations for mobile working.
- Patient access to The Cloud, 75,000 devices attaching per month
- Replacement of traditional phone lines with service run across the new technology solutions, making significant savings in the last financial year
- Continuing to provide refresh programme £2m despite growing IT estate
- Replacement of the Patient entertainment system in NPTH
- Best performing IT service desk NHS Wales
- Web Chat help desk implemented 1st in NHS Wales
- Windows 10 upgrade to mitigate cyber security risks.

SBUHB will continue to review, replace and modernise the infrastructure in conjunction with the National Infrastructure Strategy.

Information Governance - During recent years governance models and structures for the management of Information Governance in SBUHB have matured. There is good evidence that robust Information Governance practices have been embedded across the organisation, a view that is supported by internal and external audits.

Key achievements include a work programme that was undertaken to ensure the organisation is compliant and demonstrating ongoing improvement and achievement against the requirements of the General Data Protection Regulation (GDPR). An annual strategic work plan has been developed and is maintained by the department that demonstrates action and improved assurance and compliance across all areas. Outcomes of the strategic work plan are reported to the Information Governance Group chaired by the Senior Information Risk Owner (SIRO).

5 Capability and Capacity

5.1 Service Demand

The Health Board have been successful in the implementation and adoption of national and local digital solutions. This has led to a strengthening of Digital infrastructure including the increase in access to devices. The provision and support of Digital services has therefore grown significantly over the last 4 to 5 years. Examples of this growth are shown below:-

Area	Volume 4-5 years ago*	Volume end of 18/19	% increase
Number of projects being implemented	11 active projects	21 active projects	91%
Devices being supported (PCs and laptops)	7,150 devices	10,742	46%
Tablet devices being supported	0 tablets	2770 tablets	
Calls logged with service desk	49,000 calls	78,000 calls	60%
Tb of data stored and managed	112tb	152tb	36%
Active BI dashboards	0 dashboards (information provided in alternative methods)	13 active dashboards	

*18/19 used as reference and includes Bridgend. As per below Digital Services for Bridgend area are still provided by SB to CTM under an SLA

These are not an exhaustive list of areas of digital growth but are areas that are easy to measure retrospectively. It gives an indication of the size of digital growth within the HB over the last 4-5 years. Other areas would include the number of software applications in use, wireless infrastructure, number of users, telephony services etc.

The extent of growth shown in the table above reflects the ambition and success of the HB to embrace digital transformation. Over recent years we have been able to secure non recurrent funds to support digital projects and the HB has committed recurrent capital investment to support the implementation of new projects. It also indicates the increasing reliance the organisation has on digital solutions to support the provision of care and other services to our citizens. We need to ensure our support arrangements and infrastructure are robust enough to support business continuity for our digital solutions.

The SBUHB strategy identifies Digitally Enabled Care and Digitally enabled Health and Well being as 2 of it's 8 enabling objectives. These strategic enablers will underpin the delivery of the Health Boards Clinical Services Plan. The dependency and growth of digital solutions is therefore going to continue to grow and in the short to medium term growth should accelerate. This increased reliance from clinical services will also mean that IT service models will have to be reviewed to encompass support over 24/7 periods.

Digital transformation is only effective if it results in real business change and we need to ensure that our teams have the skills and capacity to be able to support the organisation to leverage digital tools to effect real change in the ways in which our services are delivered.

5.2 Workforce

The global push for digital transformation presents the Health Board with a number of opportunities and a number of threats. The HB have a committed and skilled Digital

Services team but the demand for skilled digital staff is growing and the Health Board are now struggling to recruit into key technical areas and replace staff that are leaving.

The pace of change within Digital is great and we need to ensure our Digital staff have access to the training and professional development opportunities to ensure they are able to support the drive for transformation.

As a team we have leveraged the opportunities presented from the apprenticeship schemes and a number of our people are engaged on further education courses up to degree level. We are working with the national Health Informatics Workforce Strategy and Implementation Group to identify a strategic approach to the maintaining and increase the digital workforce in NHS Wales. We recognise however the need to develop a comprehensive workforce plan for our Digital services to address the issues with recruitment and retention of staff within the team. The HB needs to ensure that it is able to offer people attractive careers in supporting us to achieve this transformation.

A key area of the workforce plan will be to grow the capability and capacity of business analyst to understand and deliver business transformation change and benefits realisation. Growing the digital clinical workforce under the leadership of our Chief Clinical Digital Officer will enable clinicians to develop a career in digital health/clinical informatics and help clinicians and professional bodies recognise their valuable contribution to systems development, implementation roll-out and evaluation in order to improve patient care and delivery of services.

Business and Cultural change is essential to achieving digital transformation. This change cannot take place without the wider workforce (and our citizens) being able to embrace the tools we will be able to provide them. The organisation will be working closely with HEIW in the execution of the national workforce strategy which includes a focus on “the digital workforce”.

The HB has committed to the Digital Inclusion Charter and we need to be able to ensure our staff are comfortable using the solutions we provide and are able to innovate themselves and share knowledge with their peers. We have had some success in this area with roll out of Corporately Owned Personally Enabled (COPE) ipads in the community where staff were encouraged to familiarise themselves with the device and apps by allowing them to use for personal as well as work. Initiatives like these will have to be expanded across the HB.

6 Digital Funding and Investment

Digital transformation requires significant investment to achieve the long term benefits. Recommendations from local audits, in addition to the WAO review, indicate the need for a robust investment plan for sustained delivery of benefits through digital adoption.

Based on the 2018/19 funding position, the Digital Services revenue budget (excluding Health Records/Coding) was £7.6m. The revenue budget was subsidised by committed discretionary capital of £0.9m for the delivery of projects. This total of £8.5m equates to 0.73% of the Health Boards 2018/19 revenue budget. Experts advise that organisational spend on Informatics should be in the region of 3-5%. (Figures for 2018/19 have been used as in 2019/20 the Boundary Change meant that SB revenue budget has changed),

As well as the recurrent commitment from the Health Board, Digital services have pursued and received non recurrent funding from WG for investment in digital services. This year we have secured an additional £1.390m capital and £0.985m revenue for investment in infrastructure and cybersecurity from the Digital Transformation Fund. The Digital Transformation Fund is a £50m Transformation Fund for the NHS in Wales. The Health Board will continue to pursue these opportunities.

The success in the growth in digital services also means that we need to plan for the refresh of the investments made in recent years. The life span of digital hardware is, on average, 5 years and the replacement of this hardware will need to be managed to mitigate the risk of failing and unsupported infrastructure. Working closely with Capital planning teams will be essential.

7 Governance

Considerable work has been ongoing to strengthen the internal governance model of Digital in SBUHB and to ensure that it is aligned organisational structures and priorities including the CSP.

The full Digital Service framework is available in Appendix 2, an overview is outlined below and demonstrates reporting into the highest levels of governance in SBUHB. The framework provides assurance and escalation to the Senior Leadership Team and the Transformation Portfolio Board. The core features include:

- The Digital Services Board (DSB)– governance and assurance of programme planning, prioritisation, implementation and benefits delivery
- Information Governance Board (IGB) – governance and assurance of information and information risk
- Digital Service Management Group (SMG) – governance and assurance of operational informatics systems and services
- Business Analytics and Intelligence group – will be established to provide direction, governance and assurance of the strategy.

All Groups / Boards report via the Senior Leadership or the Transformational Portfolio Board then onto the Executive Team or Audit Committee. Underpinning these groups are Service Delivery Unit (SDU) Digital Groups have been established to ensure SDU clinical and business requirements are fully understood and prioritised appropriately. Over the last 12 months Digital Services have established a robust inclusive approach to informatics prioritisation that informs our local plans and feeds into IBG and the national prioritisation process. In addition there are a number of Programme Boards and Service Management Board that play a vital role in the implementation of projects and the smooth running of operational services. The Clinical Reference Group chaired by the Chief Clinical Digital Officer aims to ensure good clinical engagement and direction.

8 Risks and opportunities

There are a number of risks that have been identified within the Digital Services risk register that are being managed to ensure ongoing delivery of the Digital vision of the Health Board, 5 of these risks have been escalated (or are in the process of being escalated) to the Health Board Risk register, they are:

- Digital transformation (HBR 27) – as outlined in the capacity and capability and finance sections of this paper,
- Paper Record Storage (HBR 36) – the reliance on paper to record information and manage workflows within HB has created a huge volume of patient notes and other records that need to be managed and stored.
- Operational and strategic decisions are not data informed (HBR 37) – will be addressed by our business intelligence strategy
- Cyber Security (HBR 60)
- National data centre outages (TBC)

These risks are presented in more detail in Appendix 3.

The Digital Services team have a monthly Risk Management Group (RMG) that reviews and manages existing and new risks that have requested escalation onto the Digital Services risk register. Risks that need to be escalated to the Health Board Risk Register are also actioned.

9 Conclusion

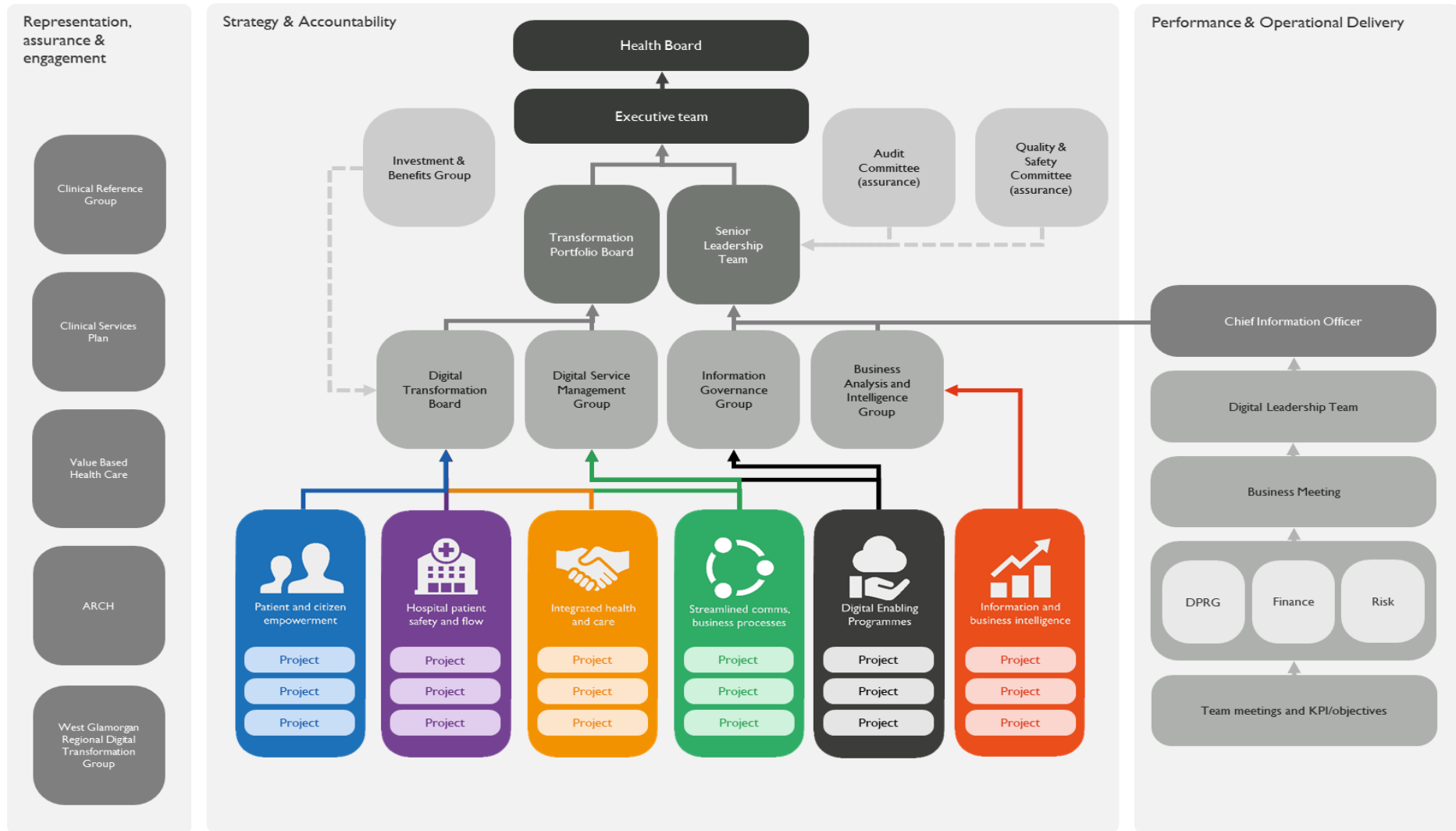
The paper has provided a comprehensive update on the digital maturity, progress and plans for digital transformation in SBUHB. The digital plan supports the delivery of the organisation strategy to deliver digitally enabled health care and wellbeing. Digital in SBUHB is supported by a maturing governance framework that has a line of sight to the highest levels of governance in the organisation. SBUHB is also well placed strategically to lead digital improvement on an All Wales level at a time of significant change.

The report describes the ongoing and increased investment, capability capacity and skills required in to achieve systematic digital change and transformation in SBUHB. The current funding of to 0.73% of the Health Boards 2018/19 revenue budget does not reach the industry standard of between 3 to 5%. A benefits and delivery focused approach aligned to key organisational objectives such as the Clinical Service Plan over the next three years will strengthen the case for further investment.

Appendix One – SBUHB Digital Maturity Assessment

Model	SBUHB maturity 2019	SBUHB maturity by 2023
Electronic Medical Record Adoption Model	Level 1	Level 2
Outpatient Electronic Medical Record Adoption Model	Level 1	Level 3
Continuity of Care Maturity Model	Level 0	Level 2
Adoption Model for Analytics Maturity	Level 4	Level 6
Infrastructure Adoption Model	Level 3	Level 5

Appendix 2 – Digital Service Governance Framework

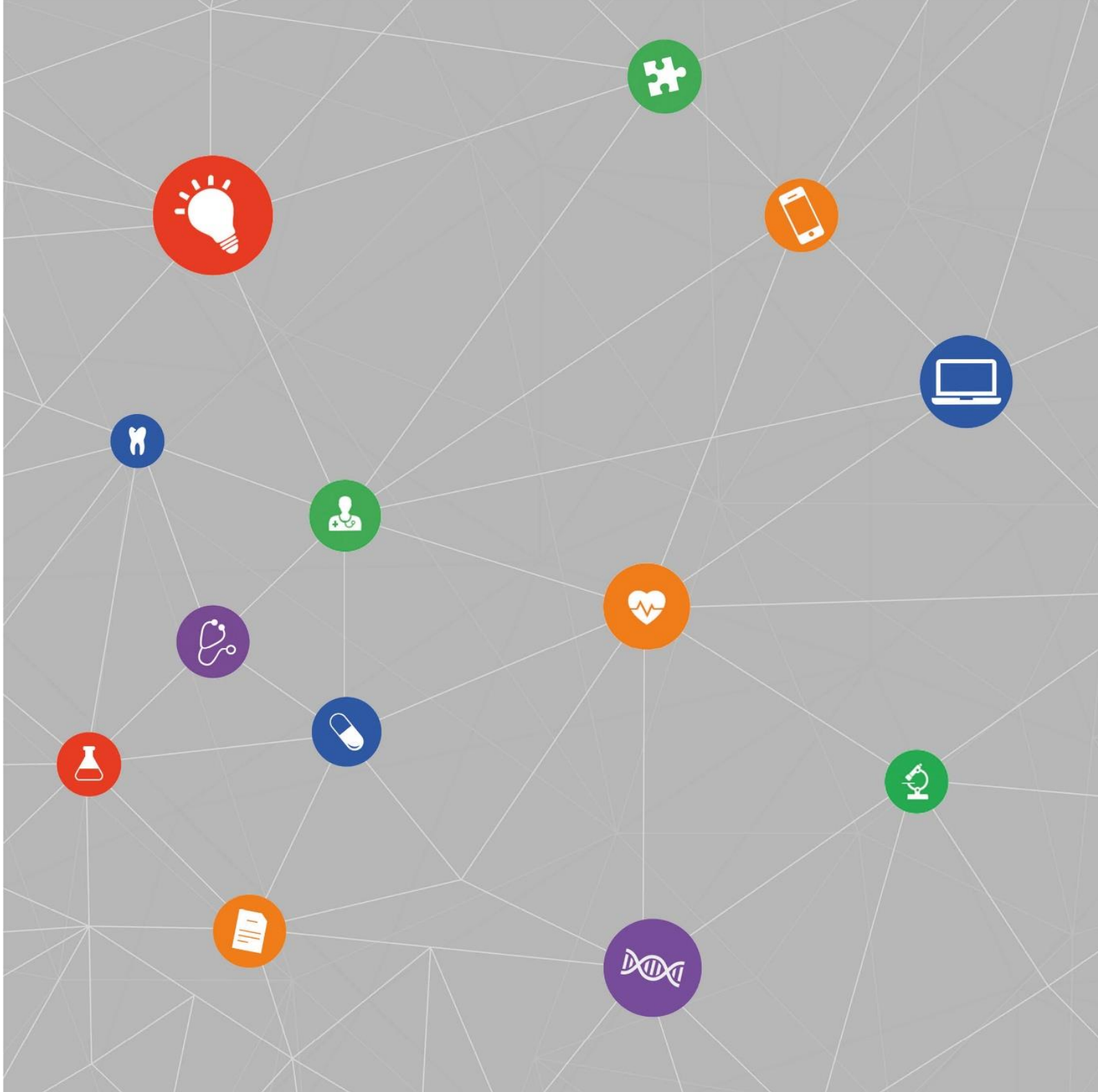


Appendix 3 – Summary of Digital Risks on Health Board Risk Register

- **Digital transformation (HBR 27)** – as outlined in the capacity and capability and finance sections of the paper, digital transformation requires significant financial investment and there is a risk that the investment required is not forthcoming. Investment is not only required to support the launch of digital transformation initiatives and projects but also on a recurrent basis to support the growth in digital services and reflect the organisation's dependency on these solutions to maintain service provision. Whilst in the longer term digital solutions will release efficiencies to make them self sufficient it is widely documented that these will not present themselves until 5-10 years after the investment has been made. SB have already made long term capital commitments to support the implementation of digital solutions and are starting to commit to the ongoing revenue required to support them. Where implementations are so large they require external funding the revenue requirements for digital solutions are included within the business cases that are submitted to WG.
- **Paper Record Storage (HBR 36)** – the reliance on paper to record information and manage workflows within HB has created a huge volume of patient notes and other records that need to be managed and stored. The size of these records continues to grow and storage areas have reached capacity. The sheer volume of paper records and their increasing complexity also means it is difficult to ensure the quality of the record. Whilst the move towards more and more electronic ways of working will decelerate the growth in the size and volume of paper records, the legacy paper record will still have to be managed. In November the HB implemented an RFID patient record tracking system. This has meant that the way in which the health records libraries are organised has been transformed releasing storage capacity and increased the efficiency of record retrieval. This gain, however, has been partly offset by the halt of record destruction as enforced by the Blood Enquiry. The development of new electronic processes such as Nursing Documentation and the review of outpatients will reduce the volume of paper required to be filed on the record. The HB need to ensure that business processes change to stop filing items on the paper record that are already available digitally.
- **Operational and strategic decisions are not data informed (HBR 37)**- the move towards capture of information and processes electronically means that data can be

accessed and reported on much more quickly. Information therefore needs to be presented to the user in a timely and accessible way to allow them to use it to inform the decisions they make. The Health Board has already developed a number of dashboards there are available at both an operational and strategic level. Adoption of the dashboards has not been as high as would have been expected however, and the Health Board is currently finalising a Business Intelligence Strategy and implementation plan that will set out how these issues will be addressed going forward.

- **Cyber Security (HBR 60)**- The level of cyber security incidents is at an unprecedented level and health is a known target. The health board has increased digital services (users, devices and systems) and therefore the impact of a cyber security attack is much higher than in previous years. The health board has recently appointed a Cyber Security Manager as a new roll and is in the process of recruiting an additional 2 cyber security staff. In 2020 the team will be implementing National Cyber Security tools that will highlight vulnerabilities and provide warnings when potential attacks are occurring.
- **National data centre outages** (HBR TBC – in the process of being escalated to the risk register) – a number of the Health Board's systems are national and are therefore hosted within data centres that are managed by NWIS. There have been a number of multi system outages over the last 2 years with a number of factors causing outages or resulting in extended outages. The latest outage in June 2019 in the Blaenavon Data Centre was caused by poor maintenance of cooling systems and insufficient monitoring. National data centre outages will disrupt health board services. SB are well represented on the national Infrastructure Management Board (IMB) and Service Management Board (SMB) which are responsible for holding NWIS to account for delivery of services and ensuring actions are identified to address any failings/risks.



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DIGITAL SERVICES
Swansea Bay University Health Board



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Digital Services: Enabling Transformation and the Organisation Strategy

January 2020



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Bae Abertawe
Swansea Bay University
Health Board



DIGITAL SERVICES: ENABLING TRANSFORMATION AND THE ORGANISATION STRATEGY

1. Digital Vision in Swansea Bay

SBUHB organisational strategy 'Better health, better care, better lives' states that the organisation will maximise digital opportunities and use it to transform how people's health is improved and how care is delivered. This is reflected in the enabling objectives of delivering, digitally enabled health and wellbeing and digitally enabled care.

To deliver this digital goal SBUHB has an ambitious Digital Strategy, 'Destination Digital'. The aim of which is to ensure that health, care and wellbeing activities carried out by everyone in our health economy will, with pace and scalability, be enabled using digital technology.

The vision for digital services in SBUHB is to deliver digitally enabled world class health, care and well-being for our population. The aim is to achieve digitally enabled, health and wellbeing by utilising digital solutions to ensure that our citizens are supported to look after their own health and wellbeing, improving quality of life and longevity. It includes providing our citizens with information about their current state of health, the potential implications and risks they may face and the resources and access to expert advice that they may need to manage/avoid these.

Digitally enabled care is about ensuring that our clinicians and, staff have access to the information they need to manage the care of our patients when they require treatment. Information being available to patient will increase levels of co-production and self-care. This information will be available at the time it is needed, be accurate, complete, and comprehensible and support the decision making of the individual that requires it.

The Health Board envisages that health, care and wellbeing activities carried out by everyone in our Health Board will be enabled using digital technology wherever optimal including ensuring care, quality and service plans and operations are data driven and maximise opportunities to improve efficiency and quality through use of digital technology.

1.1 Our Goals and Outcomes

The implementation of the vision will result in a number of outcomes for our patients, population and staff over the next three to ten years. These are detailed as follows

Three Year Outcomes:

- By 2023, clinicians will have significantly more electronic information at the point of care, staff will utilise digital solutions and have the appropriate skills to do so, and care will be increasingly available through virtual means.
- By 2023, we will have established the foundations that will allow citizens and patients to engage with and manage their health and wellbeing and will have strengthened our population need based planning.

Five Year Outcomes:

- By 2025, all clinicians and staff will primarily use digital tools in all parts of their role supported by digital solutions and robust 24/7 support services.
- By 2025, patients and citizens will be empowered to manage their health and wellbeing through digital technology, and service planning will be digital first and data driven.

Ten Year Outcomes:

- By 2030, we expect digital care to be at the forefront of what we do. This means that we will ensure that any service change is enabled by a digital approach with the supporting training and skills to maximise the benefits.
- By 2030, we want people to be able to support their own health and wellbeing through maximising the use of digital technology. This means that people will be able to use the latest technology, in partnership with us, to maintain their own health and respond to their health needs.

1.2 Assessment of Maturity

To achieve these outcomes the organisation will need to progress further in its digital maturity. The digital maturity of an organisation can be assessed and monitored. The Healthcare Information and Management Systems Society (HIMSS) is a not-for-profit organisation focused on better health through information and technology. The HIMSS framework provides a simple guide to indicating the maturity of health and care systems within an organisation. The most advanced digital NHS organisation have achieved high levels of digital maturity (level 6/7), examples include Cambridge University Hospitals NHS Foundation Trust (Addenbrooks Hospital) which invested a £150m in digital capabilities to achieve this status.

There are a number of assessment areas, each have international standards that determines digital maturity in hospitals based on a score of 0 to 7. The higher the number, the further along an organisation is in its digital maturity in that area.

Swansea Bay UHB have completed a self-assessment against the model and are currently scoring between 0 and 4 across the assessment areas (see appendix 1). The digital plans that are in place will ensure further improvement and a higher score of digital maturity. This increase will require investment and a culture change in the organisation to ensure the highest levels of digital maturity In SBUHB.

2 Rebranding to Digital Services



As part of the new organisation restructure process, the Informatics Directorate took the opportunity to rebrand as “Digital Services”.

With the advancements in digital technology, the digital capabilities available to health go way beyond what we traditionally considered as Informatics. Organisations across the globe are more and more rebranding Informatics to Digital. “Digital Services” better describes the ambition of the Health Board and more appropriately encompasses the technology itself and the physical and human factors both internally and externally that we need to focus on to achieve digitally enabled transformation.

3 National Context

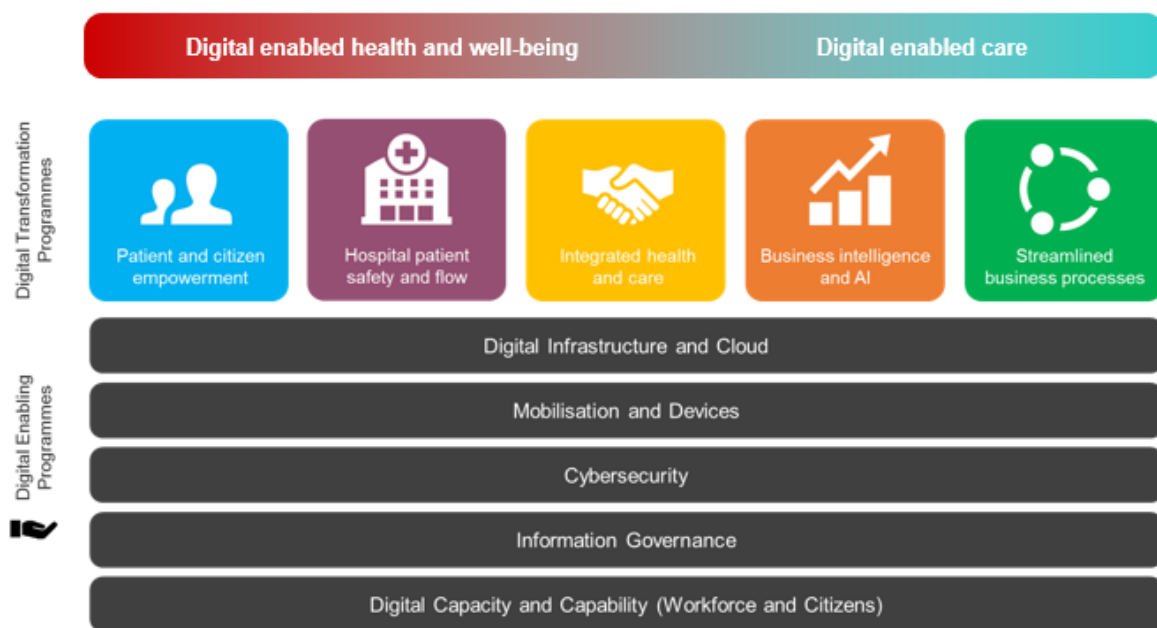
The Welsh Government’s (WG) digital health and social care strategy ‘Informed Health and Social Care’ (2015) recognises the important role of technology in facilitating patient empowerment, health and wellbeing. The strategy sets out a vision for the future use of technology in the delivery of effective and safe health and care in Wales in line with the principles of prudent healthcare and co-production. The Healthier Wales document published in June 2018 builds on this and sets out the importance of technology to support more integrated working between health and social care, focusing on the patient at the centre of the integrated team.

Nationally in 2020 will see the beginning of a number of positive changes to the Digital landscape and governance models in NHS Wales. The principles of open architecture, open platform and open standards will start to be embedded, supported by increased investment of £50m for digital priorities. There will be a new Chief Digital Officer that will sit in the NHS Executive and have a "whole system" remit. There will also be a reformation of NWIS as it becomes a Strategic Health Authority. This will give it equal status as a peer within the NHS and greater accountability, both to WG and to its own Board of Members. These external factors should all result in positive changes to advance the digital agenda in NHS Wales.

SBUHB Digital Services will continue to be supportive, collaborative and influential at the national level to deliver the digital aspirations for NHS Wales and ensure Swansea Bay UHB is leading the way. The SBUHB Chief Digital Officer (CDO) is currently the chair of the National Associate Directors of Informatics (ADIs) group and also co-chair of the Clinical Informatics Forum, which brings together clinical and non-clinical digital leaders across Wales. Furthermore, all of the members of the Digital Services Senior Team play active roles across a broad range of national digital groups and projects. The rebranding to Digital Services is also a clear statement of intent and national colleagues are taking notice.

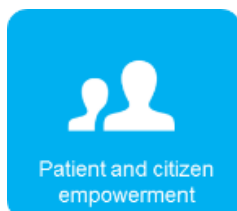
4 Achievement and Plans

The Health Board has established 5 Digital Transformation Programmes of work to deliver change and a number of essential Digital Enabling Programmes to support delivery. The digital transformation and enabling programmes are presented in the figure below.

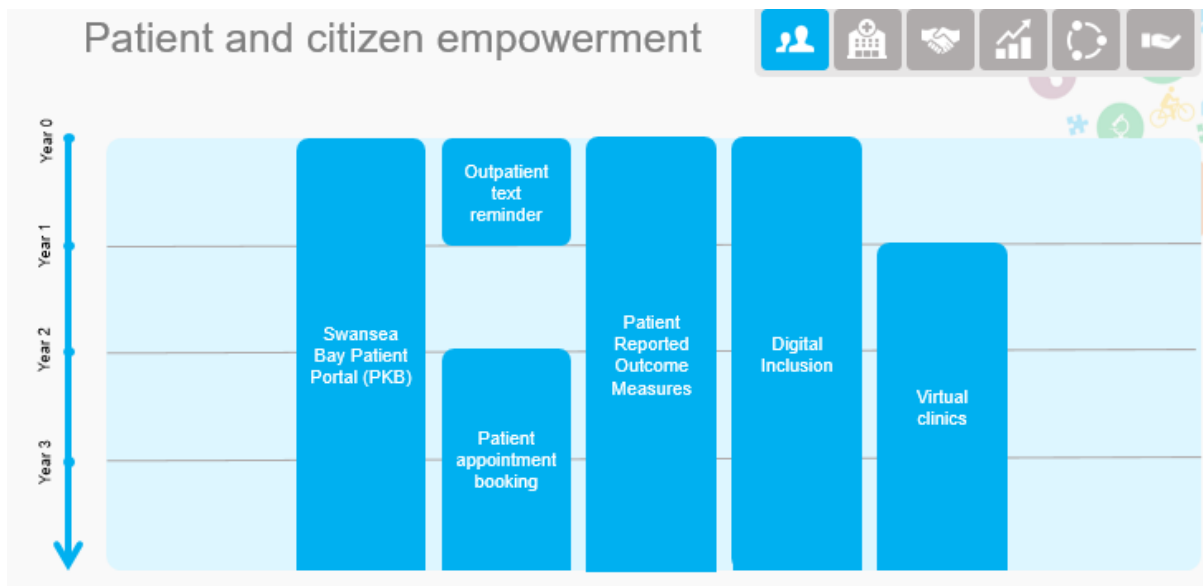


Each programme area will work to digitally enable care, health and well-being. There has been significant progress and success in each of the areas. A high level overview for each area is provided below.

4.1 Patient and Citizen Empowerment



Enabling the citizen to take responsibility and play an active role in their care is critical to the delivery of sustainable NHS services. Allowing citizens to manage their condition themselves through the co-development of condition-customised care programmes, access to self-help resources, virtual health coaching and monitoring of health status and outcomes, will empower patients and promote self-management, helping to reduce unnecessary follow up appointments. It is anticipated that this will improve patient outcomes and contribute to efficiency gains in the health and care services. Key progress areas and plans are presented below.



The Swansea Bay Patient Portal, is a digital tool that provides our citizens with access to their own care records, enabling them to capture and share their own health and care data, and to communicate with health and care services,

- 1151 patients and 277 staff members registered
- Example Benefit: Dermatology in Singleton have reduced follow-up appointments through virtual working with their systemic patients. By reducing their quarterly appointments to just 1 face to face appointment and three virtual reviews a year, with the 79 patients registered the team are looking to reduce their follow-up outpatient appointments by up to 237 a year.

Over the next three years Swansea Bay Patient Portal will be rolled out across the population and to more clinical specialties across the Health Board and introduce more functionality through the integration with national systems.

Patient Reported Outcome Measures (PROMs) is a mechanism to capture patient information and outcomes. The measures are often captured via questionnaires that patients are asked to complete before and after treatments to assess how they feel, from their own perspective. The benefit of collecting PROMs information across all of our services will be the use of analytics and data to improve care provision and outcomes, as well as service design and transformation. Clinical speciality that are making good progress in this area include:

- Cataract (patient response rate 50%),
- lung cancer (patient response rate 90%) and
- hip & knee replacement (patient response rate 60%)
- 5 heart failure community clinics commenced in December 2019 to assess best access models for patients

Over the next three years this is critical to the delivery of the Health Board's Value Based Healthcare Model (VBHc). SBUHB will continue to rollout the most appropriate solution(s) with which to enable our patients to easily record their outcomes, which in turn will create a rich data source for local and national benefit.

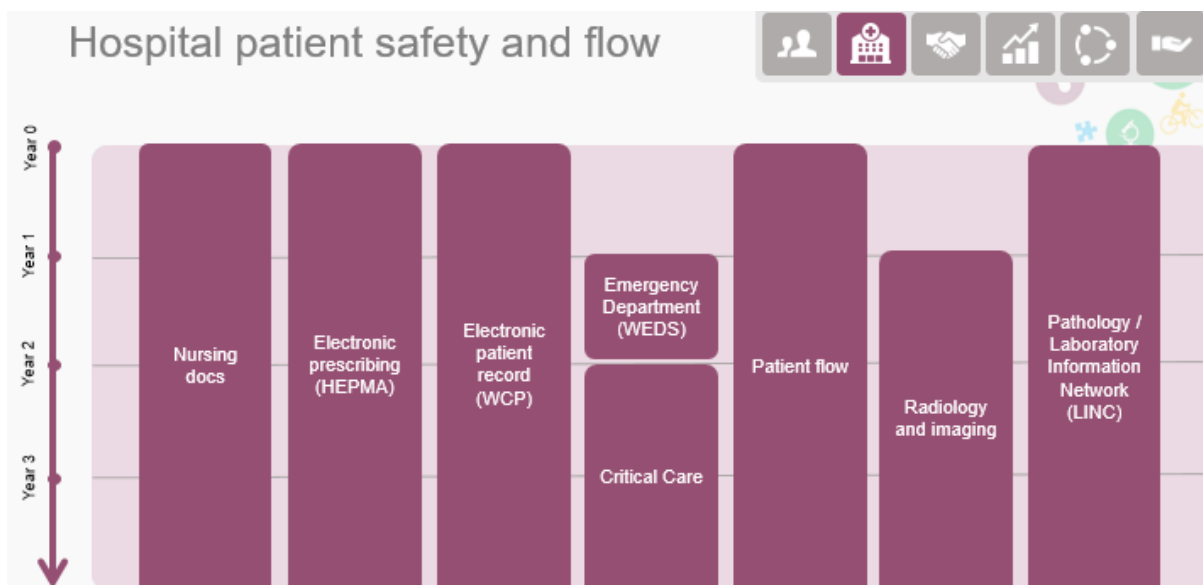
Virtual Clinics and Patient Interactions - This will include the introduction of video clinic appointments and the expansion of telephone led clinics and leverage the functionality within Swansea Bay Patient Portal. Patients will feel more supported and have greater access to clinical advice at a time that suits them.

Digital Inclusion – Improving digital literacy has been shown to have a significant impact on improving health outcomes for patients by helping them to take control of their health and care. Giving them skills to access the right information and services enables them to manage their conditions better as well as helping to relieve the burden on NHS services. SBUHB has established a collaborative working approach with Digital Communities Wales. A HB steering group has been established and a number of initiatives are being piloted with staff and patients across the organisation.

4.2 Hospital Patient Safety and Flow



Transforming the patient's journey through the inpatient setting by providing clinicians with electronic systems and tools designed with the patient's care co-ordination and communication at the centre. Optimising inpatient flow will improve the safety and quality of care for our patients and ensure better outcomes by reducing the harm, waste and clinical variation inherent in current paper based systems. Key progress areas and plans are presented below.



E-Whiteboard Solution (Signal) - An in house developed system that replaces physical whiteboards to ensure live information is available for every patient in our hospitals. The aim is to increase the visibility of the patient pathway, supporting better patient flow and safety. Progress to date includes:

- Implementation across Singleton complete
- Morriston implementation underway with completion in quarter 4 of 2019/20.
- Enabler for Hospital to Home supporting safe and more speedy transfer and discharge of patients

- Improves multidisciplinary team working as all members of the MDT are on the same system (previously used paper to make their notes), freeing up time to care
- Increased compliance of sepsis bundles
- Proactive management of infection control, allowing the infection control team to identify at a glance where the high risk patients are
- Created a strong visionary group of clinical digital champions

The learning from this implementation will be used to inform the National patient flow requirement and further roll out and functionality across the Health Board.

Welsh Clinical Portal (WCP) - The Welsh Clinical Portal is a view of patient information from a number of computer systems and databases in use in Wales. The collection of information provides healthcare staff access to a personalised workspace with their own patient lists. WCP allows clinicians to order tests and view results from across Wales and is a growing source of electronic information required to assess and treat patients. Progress to date includes:

- Electronic test requesting (ETR) live in 123 locations across the Health Board - ETR is supporting pathology improvement projects. E.g. 40% reduction in average time for full blood count results to be made available in the record (58 to 25 mins).
- All Wales view of pathology, cardiology and radiology diagnostic and clinical documentation. 8000 results from other HBs viewed per month. Therefore significant reduction in patients bled unnecessarily as clinicians are no longer required to contact other organisations/repeat tests where clinically-relevant results are available in the single patient record.
- Implementation of the WCP discharge summary (MTeD) has improved patient safety through more speedy transmission of discharge information to GPs. Compliance for patients discharged from general medicine wards has increased from 48% to 80%

In 2020/21 we will continue to maximise the use of electronic test requesting (ETR) which will be supported by the introduction of a phlebotomy workflow application. Following 2020/21 the focus will shift to ETR for radiology. We will also continue our progression towards a paper light Outpatients department.

Electronic Nursing Documentation - Digitisation of nursing documentation in order to reduce duplication, releasing more time for direct patient care. Swansea Bay have developed software on behalf of the National Programme and a pilot is planned for Q4. This is a fundamental element of delivering the digital ward.

In 2020/21 we will continue the implementation and development of the Nursing Documentation system across the Health Board.

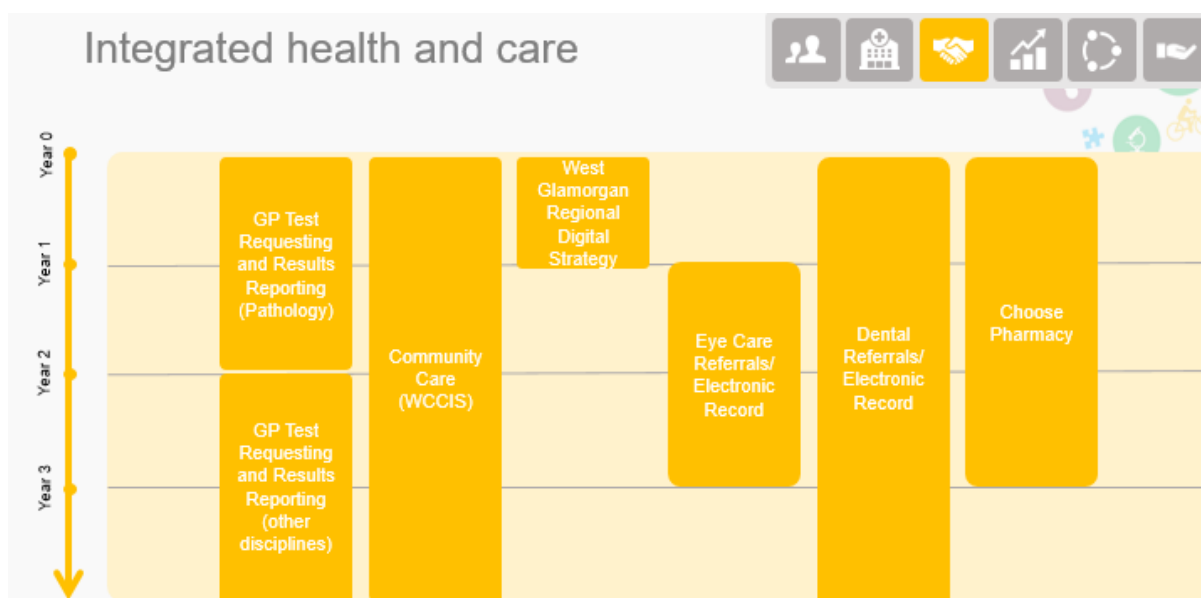
Hospital Electronic Prescribing and Medicines Administration (HEPMA) – SBUHB is the first Health Board in Wales to introduce Hospital Electronic Prescribing and Medicines Management (HEPMA). HEPMA will be implemented across inpatient wards at Neath Port Talbot and Singleton by the Q2 of 2020/21. The solution will provide a range of significant clinical safety benefits associated with the prescribing and administering of medicines.

Welsh Emergency Department System (WEDS) – WEDS is a new information system for the emergency departments and assessment units in SBUHB. Digital Services are working with NWIS towards a go live in 2020/21. The system will support the improvement programme in ED to deliver timely and efficient care and provide improved information for decision making and patient coordination.

4.3 Integrated Health and Care



This programme is about enabling staff across Secondary care, Primary Care, Community, Mental Health, Learning Disabilities, Social Care and other partners to be able to share information knowledge and expertise. This will facilitate SBUHB and our partners to transform the way we work together and pool resources to best support the health and wellbeing and care of our citizens. Key progress areas and plans are presented below.



Electronic Referrals - Sending of referrals from GP practices to secondary care and prioritisation electronically by Consultants. 100% of GP Practices in SBUHB can now send referrals electronically and 92% of those are prioritised electronically by clinicians. This has enabled departments to more efficiently process referrals e.g. Cardiology are now actioning e-referrals in 4 days compared with 13 days using the paper process.

Welsh Community Care Information System (WCCIS) - The Welsh Community Care Information System (WCCIS) is an electronic information sharing platform designed to deliver improved care and support for people across Health and Social Care in Wales. Planning and engagement is underway on a regional basis. A local readiness team has been established. A full business case will be submitted to SBUHB Investment and Benefits Group in Q3/Q4 of 2019/20.

By the end of 2020/21 we aim to have rolled out WCCIS to 1,200 of our community staff. 500 of these staff will be going live in alignment with our partners in Swansea Council with the remaining 700 being community nurses working across the health board. The remaining 2,300 users of the system are expected to become online over the following 2 years in a phased approach.

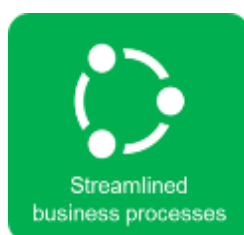
Mobilisation of Community staff - Following a highly successful community mobilisation programme, 100% of community staff (2400) have access to an iPad to improve patient care and work more efficiently. SBUHB Digital Service team, developed a mobile app for Health Visitors which supports the management of their caseloads, providing functionality to and outcome appointments at the point of care which has resulted in an additional 95 contacts per week

Optometry Electronic Record - Eye care digitisation is a programme of work to implement an electronic patient record for optometry patient that is integrated with other national solutions and systems. The system will support NHS Wales's strategic direction of providing appropriate care closer to home, supporting people to maintain their independence by reducing sight loss and the burden of blindness. SBUHB have been working closely with the national eye care programme and Hywel Dda UHB to establish a regional solution for our patients.

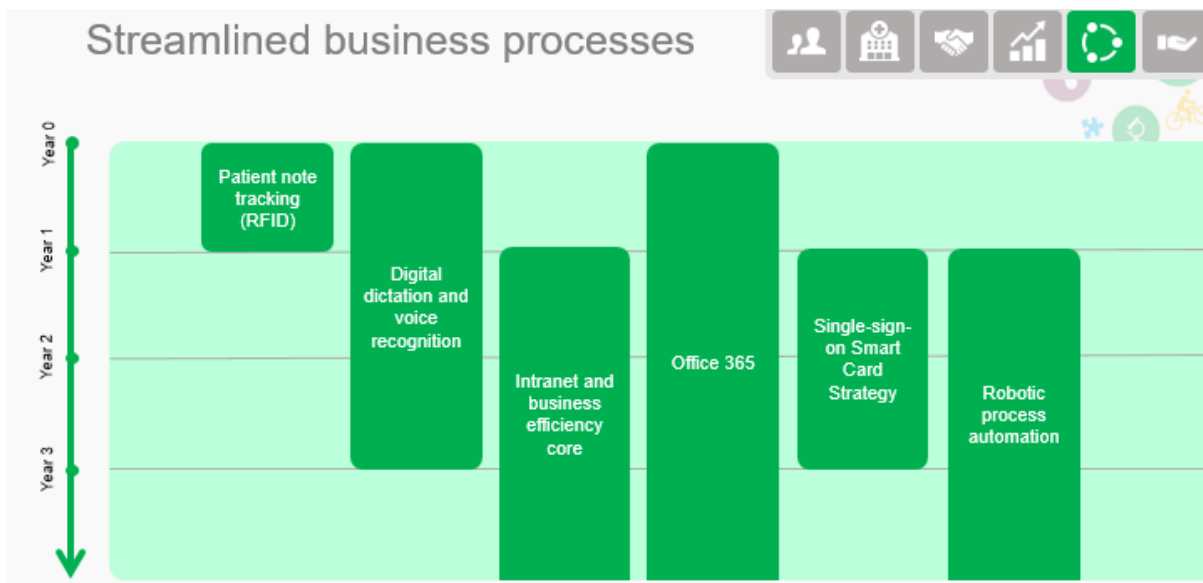
Dental Referrals/ Electronic Record - as with the requirement for service change within Eye Care, dental services need to work more closely between acute and community settings. This will be facilitated by a new dental referrals and electronic record system, and allow services to transform, to better meet the needs of the patient.

GP Test Requesting - From 2020/21 Digital Services will work closely with GPs to rollout the electronic requesting of test in primary care from secondary care. This will include close working with the laboratories to pilot new functionality to be made available in the Welsh Clinical Portal.

4.4 Streamlining Business Processes Progress and Plans



Enabling staff across the Health Board to reduce the time spent on administrative processes, providing more time for value added activities. This ranges across all clinical and administrative functions of the Health Board. Key progress areas and plans are presented below.



Heath Records Modernisation

RFID tagging of acute records, Location Based Filing using barcode scanning and identification of patients' record locations via fixed sensors. This will enable records to be easily tracked, located and made available when required. The RFID tagging solution was successfully implemented across all health records libraries in November 2019 to improve effectiveness and efficiencies of records provision. The saving profiled in the Welsh Government invest to save scheme will be released in 2020/21.

Microsoft Office 365

NHS Wales confirmed a new national agreement with Microsoft in June 2019 for the implementation of Office 365. O365 has numerous applications that we aim to exploit and is purpose built for efficient team working. The NHS can use the platform to increase its effectiveness, improve workforce productivity, drive quality and service improvement processes, and also improve the coordination, collaboration and communication of care. The collaboration and remote working tools offered by Office 365 will provide a number of opportunities for existing processes to be improved and streamlined. SBUHB has established its local programme and is currently working up a prioritised plan of delivery for 2020/21.

Digital Dictation and voice recognition - A robust benefits based business case to deliver a Health Board wide digital dictation strategy will be developed in 2020/21. The case will address administration capacity and efficiency constraints.

Single sign on Smart Card strategy – we will build on the work already completed in departments such as ED to develop a plan to provide integrated staff ID cards, “follow me” printing, access buildings and easy login to systems across the health board increasing efficiency and productivity.

4.5 Business Intelligence and Analytics



Enabling the utilisation of the data we capture within our digital solutions to support evidence based decision making is key. During the period SBUHB will be accelerating the use of business intelligence with the launch of a BI and Analytics strategy. The strategy will support the organisation to use bespoke analysis to help understand and predict demand and to make decisions on investment to inform local health strategy planning and will enable insightful and timely health intelligence. Key progress areas and plans are presented below.



Business Intelligence Strategy - Business Intelligence is a key part of the Health Board's Digital Strategy "Destination Digital" and is an essential element of the Health Board's Digital Transformation. Business Intelligence and advanced analytics are the methods and systems by which the organisation can answer healthcare related questions, pose new questions, learn, adapt, improve and gain actionable insights and intelligence. This will lead to better planning and decision making. A draft plan is currently in development and will be released in Quarter 4 of 2019/20, outlining both the approach and the infrastructure required to deliver excellent Business Intelligence and Analytics across Swansea Bay over the next 5 years.

National Data Resource (NDR) - The National Data Resource is aimed at improving the way data is collected, shared and used across health and care organisations. The programme is being led by NWIS with all organisations represented and SBUHB are fully engaged with colleagues to deliver a platform that will provide improved analytics capability through research and direct access to data that will enable better decision making for clinicians. Whilst this is a 10 year programme each health board has been allocated 2 data analysts to support the flow of data into the NDR, and work on this will start from February 2020.

Ward Dashboard - Acting as a key driver to ensure all wards have access to timely information to inform decision making and reduce risk, the Swansea Bay ward dashboard was rolled out to all Swansea Bay hospital sites over the course of 2019. The dashboard, developed in house by Swansea Bay Digital Intelligence, facilitates the Ward to Board concept by reporting on a range of key quality and safety indicators to each HB ward and is fully supported by the Quality and Safety Committee.

Clinical Trial Software, TRINETX - Fully supported and implemented the flow of datasets to Clinical Trial software, TRINETX, to support R&D Clinical Trials. This superseded the previous CLINITHINK software and the team received high praise for its work directly from the TRINETX and the R&D team. The software processes patient coded data to identify patients who may be suitable for clinical trials and there is continued dialogue with TRINETX to explore the adoption of the Natural Language Processing function within the software to allow for future data exploration opportunities.

Single Cancer Pathway (SCP) - Swansea Bay continue to support the work requirement to manage and report the Single Cancer Pathway. Key elements of this programme included an update to the WPAS TRACKER 7 module in 2019, and continued development of a dataset to ensure consistent and timely reporting of SCP activity and waiting times.

Surgical Services & Theatres Redesign Group (SSTRG) - The Digital Intelligence department have been working with the SSTRG resulting in new fully automated interactive views of theatres information being delivered to the desktop. The performance metrics, case level review and other pages have now been complimented by the new 6, 4, 2 page which allows managers and other users to measure the efficiency of the booking process. Users of the Dashboard can easily see the current booking status of theatres and any cancellation, empty sessions and reallocations as well as future sessions. This allows managers to more effectively manage the service and take action based on the dashboard outputs.

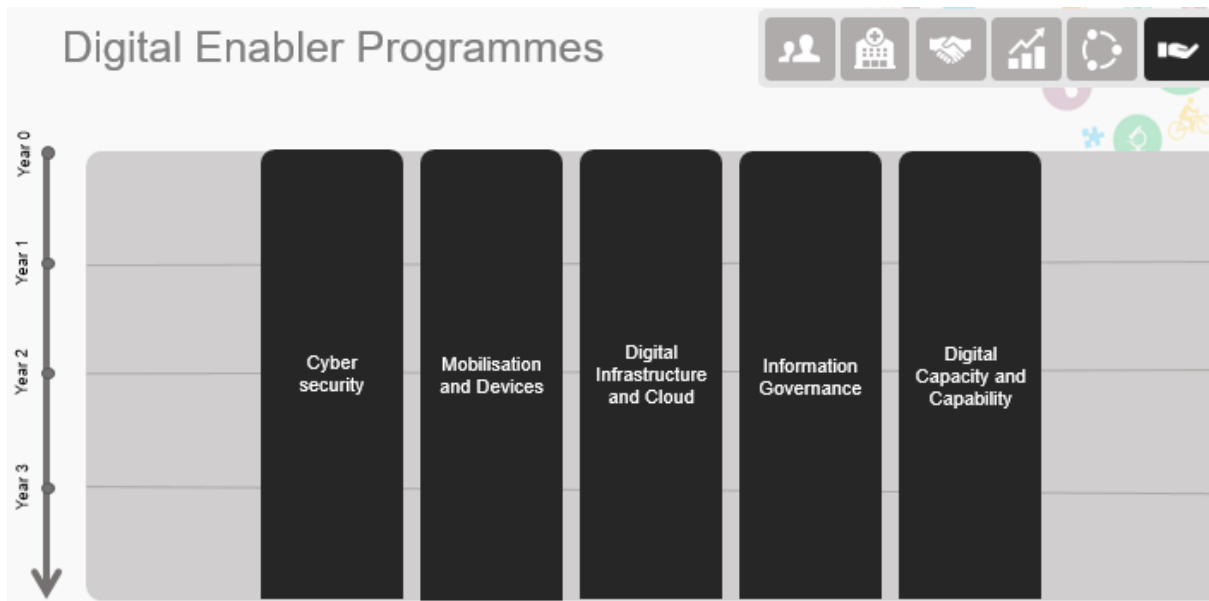
Dashboards and Business Intelligence Tools – Business Intelligence tools and Dashboards continue to be the way that information and intelligence is delivered across Swansea Bay HB. Going forward, there will be a focus on enhancing the work already undertaken to ensure the BI tools provide the information and analysis required by our strategy.

There will be a re-evaluation of the platform used to deliver this intelligence, currently QLIK, to discover the opportunity brought about by Office 365 and the intelligence toolkit that forms part of the suite, namely Power BI. Along with this approach will be a focus on predictive and prescriptive analytics (not just descriptive) which will include the opportunity to explore advanced modelling techniques via the integration of new technologies into our platform.

4.6 Digital Enabler Programmes



Digital transformation cannot be realised without firm digital foundations. Clinicians are becoming more and more reliant on digital solutions to facilitate the provision of high quality care and this dependency will only increase. SBU are therefore focussing on ensuring our digital services are resilient and secure. Key progress areas and plans are presented below.



Cyber Security - Cyber Security refers to the body of technologies, processes and practices designed to protect networks, devices, programs and data from attack, damage or unauthorised access. Cyber criminals actively attack healthcare organisations due to the importance of the data and resale value of the data. SBUHB is working with NWIS, WG and other Health Boards to ensure our defences are as strong as they can be. A key focus will be on the preparation and assessment for the implementation of the Network and Information Systems Directive (NISD).

Mobilisation and Devices - A key principle of our approach to digital is to ensure that our staff have access to the relevant information and are able to complete transactions in the right place and at the right time. Recent success have included

- Deployment of community devices as detailed above
- Replacement of antiquated bleep system with modern Cisco phones.
- Tracking in real time of medical equipment in Morriston
- Use of IPADs in Special Care baby unit for remote monitoring of babies when families are away from the hospital
- Remote access offered to staff to enable flexible working and improved recruitment of hard to source staff groups
- BYOD, 2200 active users to enable access to IT at right time and right place

SBUHB will build on the work that has already been done in this area and expand the use of mobile devices underpinning the use of a number of our digital solutions such as HEPMA, Nursing documentation and Patient Flow

Digital Infrastructure and Cloud - Robustness of our infrastructure is essential to the delivery of digital transformation. Areas of progress have included

- Pervasive WIFI network across all sites providing patient access to information and laying the foundations for mobile working.
- Patient access to The Cloud, 75,000 devices attaching per month
- Replacement of traditional phone lines with service run across the new technology solutions, making significant savings in the last financial year
- Continuing to provide refresh programme £2m despite growing IT estate
- Replacement of the Patient entertainment system in NPTH
- Best performing IT service desk NHS Wales
- Web Chat help desk implemented 1st in NHS Wales
- Windows 10 upgrade to mitigate cyber security risks.

SBUHB will continue to review, replace and modernise the infrastructure in conjunction with the National Infrastructure Strategy.

Information Governance - During recent years governance models and structures for the management of Information Governance in SBUHB have matured. There is good evidence that robust Information Governance practices have been embedded across the organisation, a view that is supported by internal and external audits.

Key achievements include a work programme that was undertaken to ensure the organisation is compliant and demonstrating ongoing improvement and achievement against the requirements of the General Data Protection Regulation (GDPR). An annual strategic work plan has been developed and is maintained by the department that demonstrates action and improved assurance and compliance across all areas. Outcomes of the strategic work plan are reported to the Information Governance Group chaired by the Senior Information Risk Owner (SIRO).

5 Capability and Capacity

5.1 Service Demand

The Health Board have been successful in the implementation and adoption of national and local digital solutions. This has led to a strengthening of Digital infrastructure including the increase in access to devices. The provision and support of Digital services has therefore grown significantly over the last 4 to 5 years. Examples of this growth are shown below:-

Area	Volume 4-5 years ago*	Volume end of 18/19	% increase
Number of projects being implemented	11 active projects	21 active projects	91%
Devices being supported (PCs and laptops)	7,150 devices	10,742	46%
Tablet devices being supported	0 tablets	2770 tablets	
Calls logged with service desk	49,000 calls	78,000 calls	60%
Tb of data stored and managed	112tb	152tb	36%
Active BI dashboards	0 dashboards (information provided in alternative methods)	13 active dashboards	

*18/19 used as reference and includes Bridgend. As per below Digital Services for Bridgend area are still provided by SB to CTM under an SLA

These are not an exhaustive list of areas of digital growth but are areas that are easy to measure retrospectively. It gives an indication of the size of digital growth within the HB over the last 4-5 years. Other areas would include the number of software applications in use, wireless infrastructure, number of users, telephony services etc.

The extent of growth shown in the table above reflects the ambition and success of the HB to embrace digital transformation. Over recent years we have been able to secure non recurrent funds to support digital projects and the HB has committed recurrent capital investment to support the implementation of new projects. It also indicates the increasing reliance the organisation has on digital solutions to support the provision of care and other services to our citizens. We need to ensure our support arrangements and infrastructure are robust enough to support business continuity for our digital solutions.

The SBUHB strategy identifies Digitally Enabled Care and Digitally enabled Health and Well being as 2 of it's 8 enabling objectives. These strategic enablers will underpin the delivery of the Health Boards Clinical Services Plan. The dependency and growth of digital solutions is therefore going to continue to grow and in the short to medium term growth should accelerate. This increased reliance from clinical services will also mean that IT service models will have to be reviewed to encompass support over 24/7 periods.

Digital transformation is only effective if it results in real business change and we need to ensure that our teams have the skills and capacity to be able to support the organisation to leverage digital tools to effect real change in the ways in which our services are delivered.

5.2 Workforce

The global push for digital transformation presents the Health Board with a number of opportunities and a number of threats. The HB have a committed and skilled Digital

Services team but the demand for skilled digital staff is growing and the Health Board are now struggling to recruit into key technical areas and replace staff that are leaving.

The pace of change within Digital is great and we need to ensure our Digital staff have access to the training and professional development opportunities to ensure they are able to support the drive for transformation.

As a team we have leveraged the opportunities presented from the apprenticeship schemes and a number of our people are engaged on further education courses up to degree level. We are working with the national Health Informatics Workforce Strategy and Implementation Group to identify a strategic approach to the maintaining and increase the digital workforce in NHS Wales. We recognise however the need to develop a comprehensive workforce plan for our Digital services to address the issues with recruitment and retention of staff within the team. The HB needs to ensure that it is able to offer people attractive careers in supporting us to achieve this transformation.

A key area of the workforce plan will be to grow the capability and capacity of business analyst to understand and deliver business transformation change and benefits realisation. Growing the digital clinical workforce under the leadership of our Chief Clinical Digital Officer will enable clinicians to develop a career in digital health/clinical informatics and help clinicians and professional bodies recognise their valuable contribution to systems development, implementation roll-out and evaluation in order to improve patient care and delivery of services.

Business and Cultural change is essential to achieving digital transformation. This change cannot take place without the wider workforce (and our citizens) being able to embrace the tools we will be able to provide them. The organisation will be working closely with HEIW in the execution of the national workforce strategy which includes a focus on “the digital workforce”.

The HB has committed to the Digital Inclusion Charter and we need to be able to ensure our staff are comfortable using the solutions we provide and are able to innovate themselves and share knowledge with their peers. We have had some success in this area with roll out of Corporately Owned Personally Enabled (COPE) ipads in the community where staff were encouraged to familiarise themselves with the device and apps by allowing them to use for personal as well as work. Initiatives like these will have to be expanded across the HB.

6 Digital Funding and Investment

Digital transformation requires significant investment to achieve the long term benefits. Recommendations from local audits, in addition to the WAO review, indicate the need for a robust investment plan for sustained delivery of benefits through digital adoption.

Based on the 2018/19 funding position, the Digital Services revenue budget (excluding Health Records/Coding) was £7.6m. The revenue budget was subsidised by committed discretionary capital of £0.9m for the delivery of projects. This total of £8.5m equates to 0.73% of the Health Boards 2018/19 revenue budget. Experts advise that organisational spend on Informatics should be in the region of 3-5%. (Figures for 2018/19 have been used as in 2019/20 the Boundary Change meant that SB revenue budget has changed),

As well as the recurrent commitment from the Health Board, Digital services have pursued and received non recurrent funding from WG for investment in digital services. This year we have secured an additional £1.390m capital and £0.985m revenue for investment in infrastructure and cybersecurity from the Digital Transformation Fund. The Digital Transformation Fund is a £50m Transformation Fund for the NHS in Wales. The Health Board will continue to pursue these opportunities.

The success in the growth in digital services also means that we need to plan for the refresh of the investments made in recent years. The life span of digital hardware is, on average, 5 years and the replacement of this hardware will need to be managed to mitigate the risk of failing and unsupported infrastructure. Working closely with Capital planning teams will be essential.

7 Governance

Considerable work has been ongoing to strengthen the internal governance model of Digital in SBUHB and to ensure that it is aligned organisational structures and priorities including the CSP.

The full Digital Service framework is available in Appendix 2, an overview is outlined below and demonstrates reporting into the highest levels of governance in SBUHB. The framework provides assurance and escalation to the Senior Leadership Team and the Transformation Portfolio Board. The core features include:

- The Digital Services Board (DSB)– governance and assurance of programme planning, prioritisation, implementation and benefits delivery
- Information Governance Board (IGB) – governance and assurance of information and information risk
- Digital Service Management Group (SMG) – governance and assurance of operational informatics systems and services
- Business Analytics and Intelligence group – will be established to provide direction, governance and assurance of the strategy.

All Groups / Boards report via the Senior Leadership or the Transformational Portfolio Board then onto the Executive Team or Audit Committee. Underpinning these groups are Service Delivery Unit (SDU) Digital Groups have been established to ensure SDU clinical and business requirements are fully understood and prioritised appropriately. Over the last 12 months Digital Services have established a robust inclusive approach to informatics prioritisation that informs our local plans and feeds into IBG and the national prioritisation process. In addition there are a number of Programme Boards and Service Management Board that play a vital role in the implementation of projects and the smooth running of operational services. The Clinical Reference Group chaired by the Chief Clinical Digital Officer aims to ensure good clinical engagement and direction.

8 Risks and opportunities

There are a number of risks that have been identified within the Digital Services risk register that are being managed to ensure ongoing delivery of the Digital vision of the Health Board, 5 of these risks have been escalated (or are in the process of being escalated) to the Health Board Risk register, they are:

- Digital transformation (HBR 27) – as outlined in the capacity and capability and finance sections of this paper,
- Paper Record Storage (HBR 36) – the reliance on paper to record information and manage workflows within HB has created a huge volume of patient notes and other records that need to be managed and stored.
- Operational and strategic decisions are not data informed (HBR 37) – will be addressed by our business intelligence strategy
- Cyber Security (HBR 60)
- National data centre outages (TBC)

These risks are presented in more detail in Appendix 3.

The Digital Services team have a monthly Risk Management Group (RMG) that reviews and manages existing and new risks that have requested escalation onto the Digital Services risk register. Risks that need to be escalated to the Health Board Risk Register are also actioned.

9 Conclusion

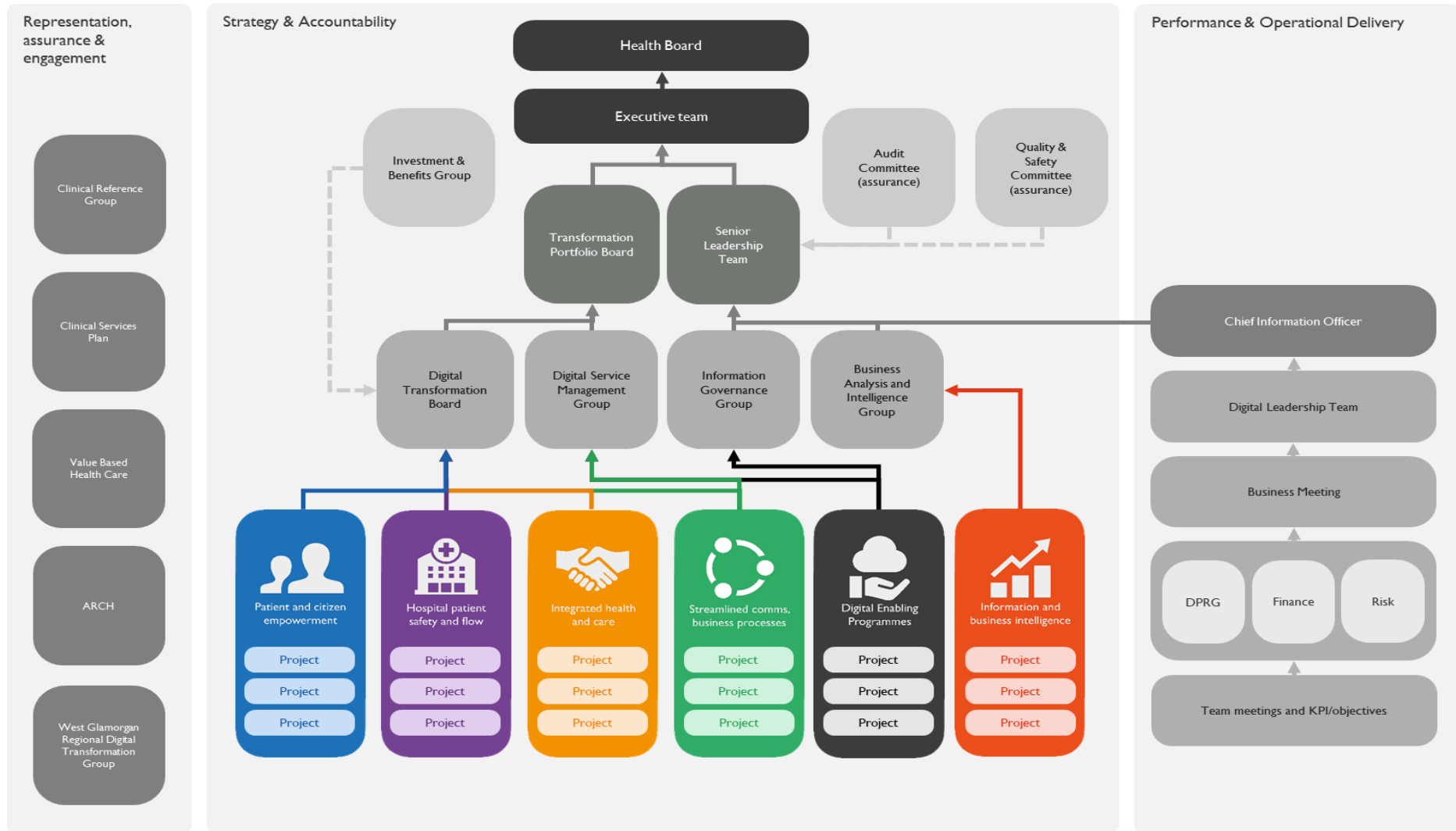
The paper has provided a comprehensive update on the digital maturity, progress and plans for digital transformation in SBUHB. The digital plan supports the delivery of the organisation strategy to deliver digitally enabled health care and wellbeing. Digital in SBUHB is supported by a maturing governance framework that has a line of sight to the highest levels of governance in the organisation. SBUHB is also well placed strategically to lead digital improvement on an All Wales level at a time of significant change.

The report describes the ongoing and increased investment, capability capacity and skills required in to achieve systematic digital change and transformation in SBUHB. The current funding of to 0.73% of the Health Boards 2018/19 revenue budget does not reach the industry standard of between 3 to 5%. A benefits and delivery focused approach aligned to key organisational objectives such as the Clinical Service Plan over the next three years will strengthen the case for further investment.

Appendix One – SBUHB Digital Maturity Assessment

Model	SBUHB maturity 2019	SBUHB maturity by 2023
Electronic Medical Record Adoption Model	Level 1	Level 2
Outpatient Electronic Medical Record Adoption Model	Level 1	Level 3
Continuity of Care Maturity Model	Level 0	Level 2
Adoption Model for Analytics Maturity	Level 4	Level 6
Infrastructure Adoption Model	Level 3	Level 5

Appendix 2 – Digital Service Governance Framework



Appendix 3 – Summary of Digital Risks on Health Board Risk Register

- **Digital transformation (HBR 27)** – as outlined in the capacity and capability and finance sections of the paper, digital transformation requires significant financial investment and there is a risk that the investment required is not forthcoming. Investment is not only required to support the launch of digital transformation initiatives and projects but also on a recurrent basis to support the growth in digital services and reflect the organisation's dependency on these solutions to maintain service provision. Whilst in the longer term digital solutions will release efficiencies to make them self sufficient it is widely documented that these will not present themselves until 5-10 years after the investment has been made. SB have already made long term capital commitments to support the implementation of digital solutions and are starting to commit to the ongoing revenue required to support them. Where implementations are so large they require external funding the revenue requirements for digital solutions are included within the business cases that are submitted to WG.
- **Paper Record Storage (HBR 36)** – the reliance on paper to record information and manage workflows within HB has created a huge volume of patient notes and other records that need to be managed and stored. The size of these records continues to grow and storage areas have reached capacity. The sheer volume of paper records and their increasing complexity also means it is difficult to ensure the quality of the record. Whilst the move towards more and more electronic ways of working will decelerate the growth in the size and volume of paper records, the legacy paper record will still have to be managed. In November the HB implemented an RFID patient record tracking system. This has meant that the way in which the health records libraries are organised has been transformed releasing storage capacity and increased the efficiency of record retrieval. This gain, however, has been partly offset by the halt of record destruction as enforced by the Blood Enquiry. The development of new electronic processes such as Nursing Documentation and the review of outpatients will reduce the volume of paper required to be filed on the record. The HB need to ensure that business processes change to stop filing items on the paper record that are already available digitally.
- **Operational and strategic decisions are not data informed (HBR 37)**- the move towards capture of information and processes electronically means that data can be

accessed and reported on much more quickly. Information therefore needs to be presented to the user in a timely and accessible way to allow them to use it to inform the decisions they make. The Health Board has already developed a number of dashboards there are available at both an operational and strategic level. Adoption of the dashboards has not been as high as would have been expected however, and the Health Board is currently finalising a Business Intelligence Strategy and implementation plan that will set out how these issues will be addressed going forward.

- **Cyber Security (HBR 60)**- The level of cyber security incidents is at an unprecedented level and health is a known target. The health board has increased digital services (users, devices and systems) and therefore the impact of a cyber security attack is much higher than in previous years. The health board has recently appointed a Cyber Security Manager as a new roll and is in the process of recruiting an additional 2 cyber security staff. In 2020 the team will be implementing National Cyber Security tools that will highlight vulnerabilities and provide warnings when potential attacks are occurring.
- **National data centre outages** (HBR TBC – in the process of being escalated to the risk register) – a number of the Health Board's systems are national and are therefore hosted within data centres that are managed by NWIS. There have been a number of multi system outages over the last 2 years with a number of factors causing outages or resulting in extended outages. The latest outage in June 2019 in the Blaenavon Data Centre was caused by poor maintenance of cooling systems and insufficient monitoring. National data centre outages will disrupt health board services. SB are well represented on the national Infrastructure Management Board (IMB) and Service Management Board (SMB) which are responsible for holding NWIS to account for delivery of services and ensuring actions are identified to address any failings/risks.