A Digital Future
for Bay Health and
Care Partners
(Oct 2020 – Oct 2023)

Foreword

"The potential for digital solutions to transform and modernise our services is significant and will be a key enabler to the future success of Bay Health and Care Partners.

Our aspirations to digitise services are long standing and we have already made significant progress, building flexible digital platforms and standardising and connecting our electronic patient records.

The agility of these digital platforms were a major asset in our response to the Covid-19 pandemic, helping us to keep our staff safe and continue to provide quality services, some of which our patients could access safely from their homes.

*Take the time to consider how you can take the digital opportunities described in this strategy and help us **Build a Better Bay**."*

Jerry Hawker
Chief Officer Morecambe Bay CCG.

Aaron Cummins
Chief Executive Officer University Hospitals of Morecambe Bay.

Contents

Foreword

Navigate the document, by clicking a section title above…

1. Our Digital Future.

This document has been written for the staff and partners of **Bay Health & Care Partners** (BHCP) with input, discussion and reflection from colleagues and patients. It describes a digital strategy which aligns with regional and national digital strategies and offers a 'digital approach' which all services within the Bay can benefit from and better support the three goals of our collective vision; **Better Health**, **Better Care**, **Delivered Sustainably**.

This strategy describes technologies and systems that can help to improve the safety and quality of the care we provide, to reduce accidental harm, **help our patients to stay safe in their usual place of residence** and to better manage their health care and long-term conditions. With better access to connected, shared electronic records and insight from analysing the data we collect we can reduce health inequalities by proactively managing cohorts of patients who are empowered to better manage their own healthcare.

This digital transformation will be overseen by a new Digital Strategy Board representing all stakeholders across the Bay and including patients. We will take care to design, with input from third sector colleagues and patient families, **flexible** digital solutions that are suitable for service users of all ages and ability. Your willingness to **engage**, co-design your digital systems and adapt, change and adopt new ways of doing things, will be critical to **successful transformation**.

Our digital platforms will improve how we communicate with our patients, making it easier to translate digital content into **different languages**, significantly **improving access** for patients with learning difficulties and disabilities and creating new channels to engage with healthy people too, customising advice and support to help them remain healthy for as long as possible.

This digital strategy supports the aims of the 2019 **NHS Long Term Plan**:

- Clinicians can interact with patient care plans wherever they are
- Use predictive techniques to plan care services for populations
- Ensure NHS systems and NHS data are secure
- Enable virtual appointments for primary care and outpatients
- Fully digitised secondary Providers, integrated with healthcare system
- Full compliance with mandated NHS cyber security standards by June 2021
- By 2024 a digital standards based approach for providers to digitally mature, with local records sharing to support integrated care

- National electronic prescriptions and electronic referrals service
- By 2022, all community and ambulance staff can access mobile digital services
- By 2022, a new integrated child protection system
- Cease use of fax machines
- By 2020, every patient with a long term condition can access their care plan via the NHS App and summary care record: By 2022, patients will access their care plans from the local shared healthcare record
- Personal health records provided from local health care shared records system
- By 2024, all women will have access to their own digital maternity record
- By 2021, all parents will choose a digital or paper red book for their new babies

"Take this opportunity to 'lock in' beneficial changes that we've collectively brought about in recent weeks. This includes flexible and remote working where appropriate; and, rapid scaling of new technology-enabled service delivery options such as digital consultations."
Sir Simon Stevens, 29th April 2020, reflecting on the early response to Covid-19.

Bay Health and Care Partners

In Morecambe Bay we currently have 34 GP Practices providing Primary Care and supported by the GP Federation, the Morecambe Bay Clinical Commissioning Group, the University Hospitals of Morecambe Bay NHS Foundation Trust providing Acute and Community Care and the Lancashire and South Cumbria NHS Foundation Trust providing Mental Health services with Cumbria and Lancashire County Councils providing social care, with support from Lancaster, Barrow Borough and South Lakes District Councils. We also have 9 Integrated Care Communities created through the Vanguard Programme working in partnership with the 8 new Primary Care Networks linking health and Care in small localities and with our communities and 3rd sector (charities).

Lancashire and South Cumbria ICS Partners

Our wider collaborators include Blackpool, Lancashire Teaching and East Lancashire Acute Providers, Police, Fire and Ambulance services and Academic and Innovation Partners at Lancaster and UCLAN Universities.

Supporting the frontline

Creating the Future

⏻ Empowering people

Integrating services

Managing the system more effectively

The five themes of the Lancashire and South Cumbria Digital Strategy (2018)

Shared Challenges and Opportunities

Our collective challenges in health and care, relate to quality, staffing, and affordability and our best opportunities lie in effective partnerships and leveraging the digital agenda.
- We need to Empower our Citizens to support better life choices , self care and their healthcare decisions.
- Support our colleagues to make their lives easier and include them in co-designing the future.
- Integrate care and design end to end care pathways within our ICP and ICS.
- Manage our systems across the ICP and ICS more effectively, with greater cooperation and convergence
- Create new opportunities for future health and care with our citizens and our partners. This includes the multi-stakeholder contribution to this strategy, in creating a "story" for our future digital planning

In Morecambe Bay, our modern digital strategy journey started in 1997, with the development of a coherent connected healthcare record at its heart.

In the time since we have made significant progress with a cohesive BHCP digital leadership team. Using principles of co-design and co-production, we have worked with clinical and business colleagues and also patient representatives to achieve common goals:

- All of our General Practices have standardised on the same clinical system (EMISWeb) to become paper-lite, making it easier to develop standard templates and to integrate and **share primary care records**. Our General Practices are also enabled with digital tools such as the MyGP App, providing patients with self-service appointment booking and a platform to collect vital signs and electronic assessments.

- Our Community Services share a single Electronic Patient Record (EMIS) with strong **two-way integration** with the Primary Care electronic record.

- Our Hospitals implemented an Electronic Patient Record (Lorenzo) in 2010 and in the 2017 NHS Digital Maturity Assessment were ranked in the top ten percent of **digitally mature** hospitals in England. Digital processes are more easily integrated and hospital clinicians can view from within the EPR for a particular patient, a summary of the Primary Care record and clinical content shared by other provider organisations in Lancashire.

In 2020, in response to Covid-19 we rapidly expanded platforms to support video and telephone consultations across primary care, community and acute services.

We have pooled data from our main clinical systems to create a Health Community Data Warehouse and implemented a single data analytics platform (Qlik) across BHCP, feeding an Analytical Command Centre providing real-time displays of patient flow in to and out of the Hospital and also Respiratory and Stroke dashboards used to proactively improve the health of our population.

We have made great strides towards a digitally mature, data rich environment which places BHCP in the **fast lane** to embrace digital solutions.
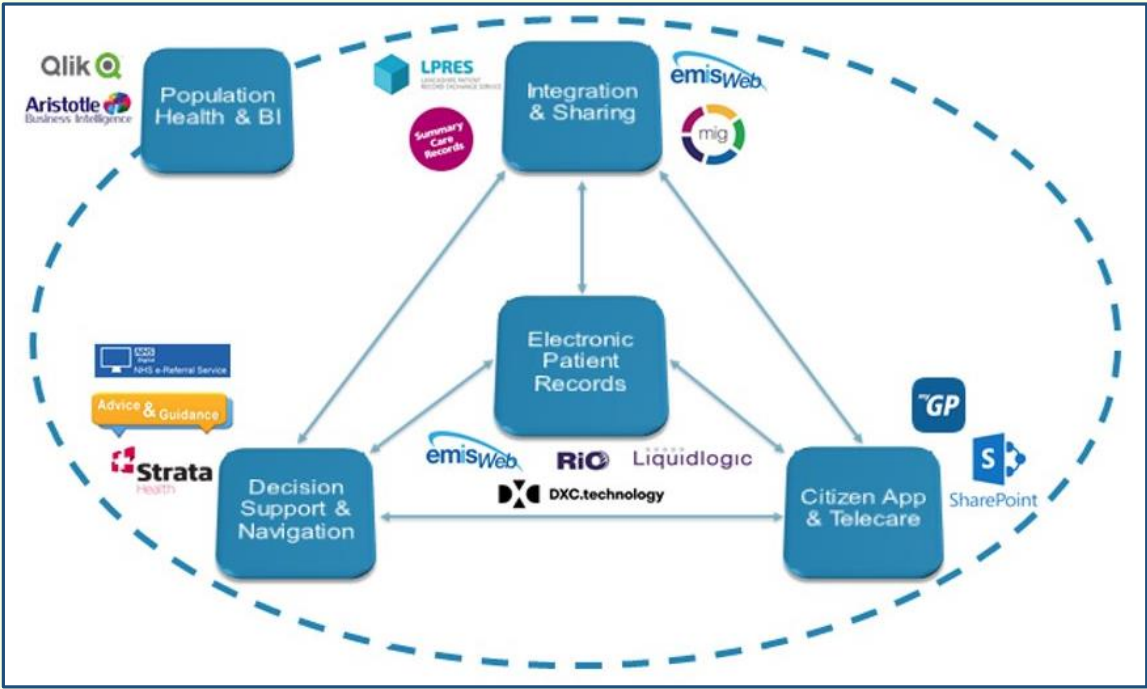
With Primary Care all using the same clinical system, EMIS, it is easy to securely share electronic records between practices and the Community EMIS system and to share different "views" of a patients primary care record with the Hospital and other partners within Bay Health and Care Partners. Through the Local Persons Record Exchange Service (LPRES) we can also share clinical documentation with and from the provider organisations across Lancashire.

Based on an idea from a local GP we developed an Advice & Guidance system which facilitates a message based conversation between a GP and a hospital specialist, helping GP's refer patients to an appropriate service, directly to a diagnostic service and sometimes avoiding the referral altogether. Advice & Guidance has since been deployed to the North Cumbria Integrated Care System and is at the time of writing being implemented across the rest of the South Cumbria and Lancashire Integrated Care System.

We use Strata to manage 'structured' referrals in to community services and social care and will combine Strata and Advice & Guidance to manage patients on to and through care pathways. A 'structured' referral means we can combine the referral with an accompanying mandatory set of information.

The diagram on the right shows the main digital systems currently deployed across the Bay.

The matrix below shows the availability of electronic record sharing within BH&CP as of March 2020.

Map of Current Digital Systems.

	UHMB		GP	CHOC	FCMS OOH	FCMS UTC	LSCFT MH	999	Virgin 0-19	LCC ASC & CS	CCC ASC	CCC Childrens
	Lorenzo	EMIS										
GP Detailed			N/A									End 2020
GP End Of Life			N/A									End 2020
MB Care Plan			N/A									End 2020
SPN			N/A									End 2020
GP Journal			N/A									
APCS Journal		N/A					Q4		N/A			
Cumbria ASC					N/A	N/A			N/A	N/A	N/A	N/A
Lancs. ASC				N/A					N/A	N/A	N/A	N/A
LSCFT MH View							N/A					
Lorenzo View	N/A											

Key

Live
WIP (est Delivery)
Available no current project
Availabe, but limited scope.
Not yet available
Direct Access Only

**Matrix of Current Electronic Record Sharing Capability.**

4. Empowering the Citizen.

The majority of citizens in Morecambe Bay and indeed the majority of staff working within Bay Health & Care Partners use digital services to manage and control many aspects of their personal lives to pay bills, manage bank accounts, ordering shopping & clothes, book flights and enjoy video calls with friends and family.

We will empower our citizens to have the same experience and control of their own healthcare. Our citizens will be able to view and contribute to their own electronic records, manage their appointments electronically using their own devices and have access to relevant mult-media content to help them to better manage their own care. When they do need to meet with a clinician for a consultation, when clinically appropriate they will be able to do so using a video call.

"The more I know about myself, my body and the choices and the consequences I make, the more confident I will be in managing my health and wellbeing".
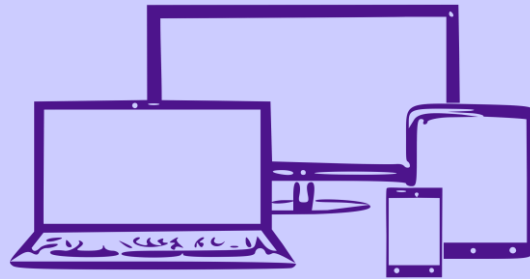
We will **empower** citizens and patients with **easy** access to influence and control their healthcare, from smartphones, tablets and computers.

Citizens and patients will be able to use **digital self-services** to book, cancel and re-arrange their appointments for **all** services across our system.

Our citizens and patients will have **easy online access** to their health and care records.

Our citizens and patients will be able to digitally communicate, **securely**, with their health and care providers.

Our citizens and patients will be able to easily **share** their vital signs such as blood pressure and other measurements such as blood glucose for diabetes and peak flow readings for asthma patients, with clinicians.

We will use as few Apps as possible for **simplicity** and favour those which have been accredited by the NHS Library or had a QA assessment through the health app evaluation and advisor organisation ORCHA.

We will **involve patients** in the design of these apps and systems.

4. Empowering the Citizen.

Patient View

Susan Jones has been suffering with mild hayfever.
Unfortunately, this has caused a worsening of her asthma which hasn't bothered her much since last summer and she hasn't had a new inhaler for a couple of years.

She sends a message to her GP via an App requesting another blue inhaler. She gets her prescription sent electronically to the pharmacy but is also sent an asthma questionnaire which she repeats and returns via the same App. Susan gets a message back from the Asthma nurse at the practice saying that a peak flow meter has been prescribed and sent to the pharmacy and requesting that she completes a peak flow diary. The message also asks that she book a telephone appointment with the nurse to discuss the results.

She has the consultation which is converted to video (during the consultation) and and her peak flow readings which have been entered automatically in her record, and inhaler technique is reviewed. She is prescribed a steroid inhaler and she agrees with the asthma nurse that it would be sensible to use a steroid inhaler over the summer months to reduce the impact of her hayfever on her asthma.

Signposting promoting self care. That autumn she is sent a reminder to book a flu jab which she does online.

Feeling encouraged with her experiences, the following year Susan requests a steroid inhaler (using the App) at the start of the summer for the first time in 10 months. The practice can see her asthma plan and understands that her asthma is only a problem in the summer months. The practices issues the inhaler and sends an asthma questionnaire and all the answers are satisfactory.

She is messaged back to say there is no need for further follow up.

We will provide easy digital library access for our citizens and patients to information (written, pictures and videos), so they can **better care for themselves** and improve their own heath and wellbeing.

Our citizens and patients will be able to **contribute** to their care by completing simple electronic forms providing digital images, customised to their care needs, to collect information to support better care.

We will provide vulnerable citizens and patients, safe access to their care records and appointments, through trusted friends and relatives, acting as **digital advocates**.

4. Empowering the Citizen.

Asthma Nurse & Others

Susan Jones wants a new salbutamol inhaler, it is not clear why. She has had them before two years ago. She has not had a review for a while. Her salbutamol is issued and she is asked to fill in an asthma Questionnaire electronically. The answers to the questionnaire are recorded in the clinical system automatically

Nurse Ellie reviews the answers and can see her asthma is not optimally controlled. Nurse Ellie sends a message back to Susan requesting a peak flow diary and a telephone appointment to discuss the results. Nurse Ellie can see from the readings that Susan's peak flow is very variable.

Nurse Ellie and Susan have their telephone consultation which Nurse Ellie converts to a video call. Nurse Ellie checks Susan's inhaler technique and discusses her symptoms. They decide to add a steroid inhaler to Susan's regime over the summer months when her asthma is bad. Nurse Ellie shares an Asthma care plan with Susan including videos of inhaler technique. Because Susan is now on a steroid inhaler for her Asthma she is sent an automated reminder to book a flu jab

Patient on PIFU

In November, two years later Susan finds that her Asthma doesn't settle. She has had to continue using her inhalers right through the autumn. Susan messages the surgery again and has a further telephone/video consultation preceded by a questionnaire and peak flow diary. A further series of investigations and consultations follows and in spite of increasing her medication there is little improvement in Susan's condition. Nurse Ellie discusses Susan's case with her GP Dr Ghazal and they feel she should be reviewed by the Respiratory network MDT. The MDT has access to Susan's GP record and the X-ray images stored on UHMBs PACs system. They conclude that the worsening of Susans condition might be farmers lung related to her new job working with horses at the local stables. Changes to her working environment resolves her symptoms and her condition settles.

5. Supporting our Colleagues.

We will digitally support all our colleagues, including doctors, nurses, AHP's and social and care workers all around Morecambe Bay. We will make their professional lives easier, so that they are fully trained to access and use the clinical systems they need and can access the information they need, at the time that they need it, wherever they are working. We will work with them to co-create better ways of doing things in the future, for health and care. We will reduce the "effort" required for our colleagues using digital systems and make it easier to capture key patient information at point of care. We will support our administrative, managerial and support services with easier access to systems whenever and wherever needed, including agile home working.

"I want to be ready, able and supported to improve the person's experience and free up my time to use my skills for the good of the people I am caring for".

We will provide a **single** 'combined' view of a patients electronic patient record at the point of care in GP Surgeries, Patients Homes, Hospital Wards & Clinics, Care Homes, Ambulances, by integrating digital records from all care settings.

Our colleagues will be able to electronically request and **collect information**, images and vital signs **from patients** to support care.

Our electronic patient records will in the future include **digital images** to support remote assessment and monitoring.

We will support **enhanced** Patient Initiated Follow-Up, through structured clinical pathways and written, visual and video information for patient groups.

Electronic **structured referrals** will support and complement **clinical pathways**, making it easier to refer patients to the correct services with the appropriate information

We will **support** colleagues to become **proficient** system users, comfortable with a wide range of different devices, through classroom learning, eLearning packages, workplace based **coaching** and the creation of a network of **digital champions**.

In line with national and regional direction we will review our current **clinical digital leadership** to include a Chief Nursing Information Officer/Non-Medical Information Officer to represent the interests of **Nurses** and **Allied Health Professionals**.

5. Supporting our Colleagues.

GP View

Dr Alison Johnston is a GP in Ulverston and treats more patients in their homes using telephone and video consultations. Her patients can send photos directly and securely into the EMIS record. When patients book an appointment in the GP Practice, they will be directed to the right Practice staff, through an online triage system.

Dr Johnston is able to see more patients who particularly need the skills of a GP. Dr Johnston's patients will be able to upload information to support their healthcare, including long term health conditions. Doctors will be supported by advice from specialists through electronic advice and guidance and decision support. This will support the right patients being referred for other services.

Dr Johnston can see her patients' records from other care providers in Lancashire and South Cumbria.

Dr Johnston will be properly equipped to work from her consulting room or from any location with a connection to the internet, including her home.

We will provide a **single** 'combined' view of a patients electronic patient record at the point of care in GP Surgeries, Patients Homes, Hospital Wards & Clinics, Care Homes, Ambulances, by integrating digital records from all care settings.

We will make it easy for colleagues to add to and maintain **structured clinical records** and use the data to build advanced business intelligence and **clinical analytics**, supporting safer patient care.

Our colleagues will provide feedback on the user experience of our systems and work with us to develop **jointly** designed solutions.

We will develop Clinical Decision Support tools to supplement our electronic patient records and support **Right Care**, **Right Place**, **Right Time**, **Right Person**.

Our colleagues will have easy access to systems , including an '**agile**' approach with mobile computer equipment and the necessary tools to access information systems, make telephone calls and operate video calls from home or other locations.

Hospital Consultant View

Dr Arindam De is a Consultant in Pain Management and Anaesthetics, specialising in providing care to patients with chronic pain conditions. Dr De's clinic can be via Telephone, Video or a Face-to-Face appointment.

During a consultation Dr De shares confidential information with his patients in a secure way. He also shares documents relevant to the current management of that pain condition. Following the consultation a mutually agreed management plan will be generated by Dr De. This will be shared with the GP and relevant health care professionals as well as the patient, through secure digital platforms. Patients will also be able to access information related to their condition and communicate with Dr De's team within that platform.
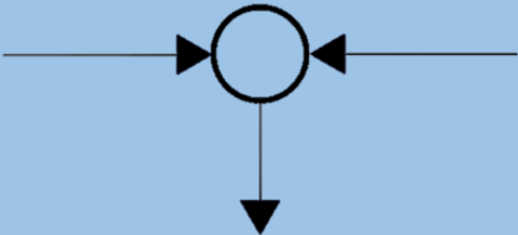
For patients with a management plan that includes Patient Initiated Follow Up a further consultation can be booked through their personalised digital platform.

Care Home Nurse View

Helen Coward is a newly qualified staff nurse in a Care Home. When her frail elderly patients with dementia becomes acutely unwell, for instance with acute breathlessness, she can see care home notes and also the GP Records, including anticipatory care plans. She can promptly contact the GP and using a tablet device or mixed reality headset in the care home the GP can provide a remote consultation, directly seeing and talking with the patient and nurse. The GP supports Helen with rapid assessment and treatment choices for her patient. She feels professionally supported and not isolated and knows her patient is getting prompt and appropriate personal care.

Helen and other staff in the care home can also use the tablet device to facilitate video appointments with the hospital and community nurses.

The tablet can be used to view patients summary electronic care records and to securely share images of pressure sores and wounds with other care professionals.

We will integrate systems and data and make it easier for colleagues to securely access a seamless view of relevant information at the point of care, helping them to make the right decision for a patient, at the right time, in the right place. We will make it easier for staff to digitally seek expert advice from a wide range of specialists and support colleagues who have developed clinical pathways to manage them electronically, helping others to place patients on to the correct pathway with the optimum amount of information to support the referral. We will help colleagues across the Bay to better understand the data they have available to them, to make informed decisions and optimise care for their patients.

"Every time we offer care, we learn more about the person and their needs. By sharing our knowledge and experience we can make better, quicker decisions for people with similar needs and the wider communities we serve".

We will share records **at the point of care** to support better decisions. We will design easy access to shared records directly from the colleague's Electronic Patient Record or else as a summary view.

We will connect with the Local Persons Record Exchange Service (LPRES) and provide **secure sharing** of clinical information across the wider Integrated Care System.

We will share data rather than duplicate it.

We will **extend** LPRES to include problems/diagnoses, test results, care plans, medications, allergies and alerts.

We will support **complex care pathways** around Lancashire and South Cumbria and connect care between GP, Community, ED and Acute Hospitals, Mental Health Services, Social Service, Emergency Services, Third Sector and Charities.

We will support our Integrated Care Communities and Primary Care Networks with cohort and population data through Business Intelligence dashboards to enable services to monitor and provide better treatment for our patients.

Mrs Threlfall

Dr Torr's Practice gets a list of patients generated from the Community Data Warehouse (CDW) who are likely to benefit from a frailty assessment. The CDW uses information from across the system to score patients risk of frailty. This list is then made available in all care settings and is prioritised by severity and any increase in risk.

Mrs Threlfall is on the list. She is 78 and lives alone with her daughter nearby. She has a moderate score and recently has been to ED twice due to falls. Mrs Threlfall is contacted by the frailty team to ask if she would like a visit to see what help and advice Dr Torr's practice might offer to improve her health and quality of life. She agrees and Denise visits the following week.

During the assessment Mrs Threlfall explains how since her dog died 18 months ago she hasn't been getting out as much and finds she gets dizzy sometimes on standing. Also Denise notices that her house is a little cluttered with multiple trip hazards. When Denise checks her BP it is low on standing. Denise provides information on a local exercise class for older adults. Mrs Threlfall doesn't feel confident enough for this and so Denise sends an electronic referral directly to the community falls team to work on her strength and confidence.

With Mrs Threlfalls permission she also sends some advice about decluttering to remove trip hazards to her daughter. Denise also contacts Dr Torr to let him know about the low BP. Dr Torr books a video call via Mrs Threlfalls daughter and discusses this with them both. He reduces her antihypertensive medication and as the daughter has a BP machine asks her to send some BP readings in via the myGP app. He also asks Mrs Threlfall to keep a diary of the dizziness. At follow up 3 weeks later, Mrs Threlfall is more confident and the dizziness has stopped. With the help of the falls team she is looking to go to the exercise class at the womens institute.

Mrs Threlfall is wondering about getting a little dog again.

We will digitally support integrated tools to support efficient patient flow, through structured evidence-based referrals around the system, **placing patients on to correct pathways**.

We will support better choice and decision-making, through **high availability of information**, wherever it is needed.

We will use the Information Sharing Gateway to support **seamless information sharing** across our system. We will develop academic partnerships, including consent models for secondary use of data.

We will integrate **Advice and Guidance** into digital care pathways, support its expansion across Lancashire and South Cumbria and extend the use to include Specialist GP's and Mental Health.

7. Managing the System more Effectively.

We will empower clinical and business leaders to use the data we collect to make informed decisions and recommendations to better manage the healthcare of our population and our business processes and to standardise clinical care whilst driving down unwarranted variation.

We will strive with colleagues across our Integrated Care System to simplify the digital landscape, to have fewer systems to manage and integrate.
Where it is possible we will consolidate to single systems, improving patient flow and the user experiences of our staff.

"By working together we have an opportunity to better use resources to improve health outcomes for people in our region".

We will work collaboratively with colleagues across Morecambe Bay and Lancashire and South Cumbria to simplify the digital environment and **consolidate digital systems** such as Clinical EPR, PACS and other Digital Imaging, Pathology, Cardiology, Maternity and Ophthalmology across our organisations, to simplify clinician working, IT support and mobility of data and colleagues working across the area.

We will develop tools and a learning strategy to enhance the ability of our clinical and business leaders to **use data** and **continually improve** our health and care system.

We will keep our systems **safe and secure** from cyber attack.

We will **expand our digital governance** to include representatives from GP, Community, ED and Acute Hospitals, Mental Health Services, Social Service, Emergency Services Third Sector and Charities.

We will **collaborate** with colleagues across South Cumbria and Lancashire and **converge** to a single approach on how we use data to ensure our public are well informed.

We will extend the Hospital Analytical Command Centre to incorporate Community Services and Referrals, to support **efficient patient flow** through our Integrated Care Communities and Primary Care Networks.

7. Managing the System more Effectively.

We will adopt the national strategy of 'internet' and 'cloud first services', extending our range of **agile services** and maximising the collaboration opportunities of shared NHS platforms.

We will support our clinical and business leaders in approaches to **standardising** clinical care and reducing unnecessary complexity.

We will support the development of **service line costings** for new care pathways, Integrated Care Communities and Primary Care Networks.

We will **explore the value** of consolidating IT services across our Integrated Care System to share scarce technical resources and co-develop and support the digital systems we consolidate.

Where recognised benchmarks exist, such as those provided by Healthcare Information and Management Systems Society (HIMSS) we will use them to measure our progress and guide future developments. Where recognised benchmarks don't exist we will create our own.

Connected Care.
A patient in Furness General ED with a suspected stroke is referred to Radiology for CT imaging and a number of very specialist scans to get a diagnosis and to help make treatment decisions. The CT scanner sends the images directly to 'Brainomix' (AI software), which aids the diagnosis by detecting even very small changes in the brain tissue. The images are also sent to PACS so the local clinicians have full access to the information.

The Consultant on call at the Neurology Hub in Preston is automatically alerted to look at the CT images and the diagnostic support images created by the software and decides interventional treatment is required. The patient is transferred to LTHTR, meanwhile the consultant and team with quick and easy access to the images and the patients electronic record, plan the best possible treatment.

A few weeks later the same patient was visiting a friend near Blackburn, had a fall and ended up in ED. The doctors and nurses with full access to the digital images, reports and electronic records provided the best possible treatment.

7. Managing the System more Effectively.

**Service Manager using analytics to take data-driven action.**

Aneta Kowalski is responsible for managing the Trauma and Orthopaedic service within the hospital and is under pressure to present a plan to the Surgical Care Group leadership team that details how the service will improve the throughput of patients within the Trust's theatres.

Aneta logs onto the Trust's analytical portal and quickly identifies a number of key apps that will help her understand both what the operational position is, and where there are likely to be problems in the future if she doesn't take action.

Over the past 12-months Aneta has been enrolled onto an internal data literacy programme and has undertaken a structured programme of training and assessment designed to improve her confidence in using data and analytics as a critical part of her role. Crucially, Aneta is confident in her ability to interpret analysis, draw conclusions and argue her case where change is required.

Aneta checks demand for her service, and can quickly identify patterns in relation to referral rates from GP practices within the region which appear to be stable. Next, Aneta checks the theatres utilisation app that allows her to track performance against key metrics such as list utilisation and overrun occurrences. There are rumours of some disparity in terms of list efficiencies and Aneta is able to quickly benchmark service, theatre and clinical performance to give her insight into where further discussion may be required.

There appears to be a pattern of under-utilisation that occurs on a Monday afternoon, and Aneta wonders whether this could be to do with list pressure resulting from patient admitted over the weekend. Aneta sets herself up some alerts within the theatres app, so that she can be notified via her work iPhone every time a list is either over-booked or forecast to over-run. Because the alerts are based on live data, and include advanced machine learning generated forecast models, she is confident that she will be able to react to the alerts and take action to ensure that any potential problems are addressed in real-time.
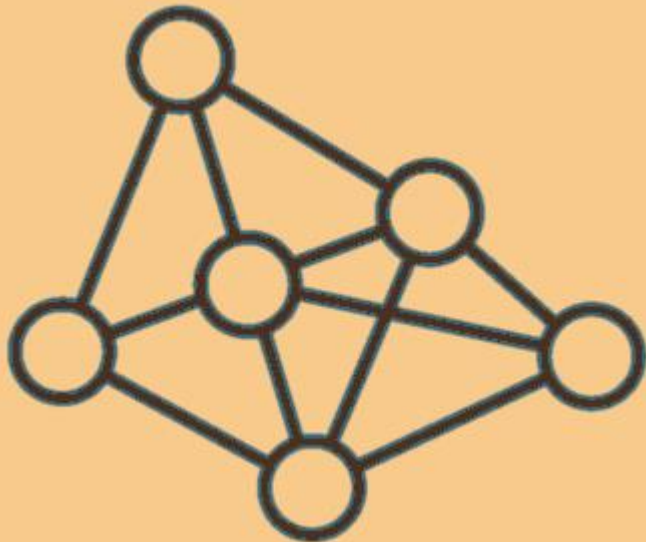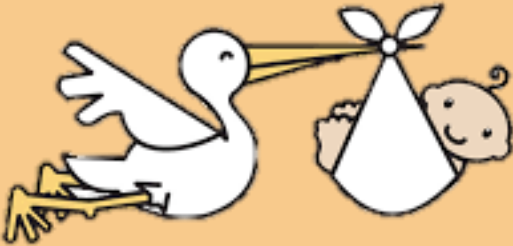
Sarah and Matthew's Story

Sarah and Matthew are having their second baby. Sarah is a full time nurse at Royal Preston Hospital, and lives in Lancaster. Sarah completes her online referral form and chooses to have her pregnancy care with a midwife at her local GP surgery, and to give birth at Royal Lancaster Infirmary. Sarah downloads the Maternity information App and receives a booking appointment with Midwife A at her requested GP surgery the following week.

Sarah and Matthew attend the initial booking appointment with Midwife A, and have already understood some of the questions they would be asked today. The booking information is entered into the Maternity electronic patient record which is shared across South Cumbria and Lancashire. Sarah has previously had some mild BP problems in pregnancy, and her last baby was born by an emergency caesarean section. Midwife A electronically requests an Obstetric appointment. Sarah has her initial blood tests taken, and her dating ultrasound scan booked in Lancaster.

Sarah attends the dating scan in Lancaster, and her record is updated. A 16 week appointment is made with Midwife A, and a 20 week appointment is arranged with her Obstetrician at Lancaster.

Sarah is able to see her pregnancy details including her scheduled appointments in the Maternity app, and can begin to update her Personal Care Record with her wishes for this pregnancy, and some questions for her Obstetricians.

At 19 weeks Sarah is at work and becomes unwell, she is seen in the Assessment Unit at Royal Preston Hospital, Midwife B can access all of Sarah's booking information, blood results and scan details. Sarah is seen by an Obstetrician and begins medication to control raised blood pressure. She is provided with a BP monitor to take home with instructions of how to monitor her BP and when to contact Maternity services for support. Midwife B updates Sarah record and a discharge summary is forwarded to her Obstetrician at Lancaster electronically, and her GP.

Sarah monitors her BP daily and enters her result into her Pregnancy App. The app updates Sarah's electronic patient record with her BP recordings. The day before her next Obstetrician appointment Sarah receives a reminder for the appointment the next day.

 At 20 weeks Sarah attends her Obstetrician appointment in Lancaster, who can access her full history including her attendance at Preston hospital and her BP diary. The Obstetrician increases Sarah's medication and books a video consultation the following week. Sarah's GP has access to an electronic summary of her Maternity Record

At 21 weeks Sarah has a video consultation with her obstetrician, her BP is stable and the Obstetrician can review her BP recordings in her electronic patient record. Her record is updated by the Obstetrician. Midwife A can see on her Caseload dashboard that Sarah has been seen today. She notices Sarah has not had her flu vaccine yet, so sends her an information leaflet via the App.

At 36 weeks Sarah and Matthew are visiting family in Blackpool, and Sarah feels unwell. She messages her midwife on the maternity App. Midwife A tells her she must attend the local maternity unit. She is urgently admitted to the local Birth Suite. Midwife C has full access to Sarah's pregnancy records and the whole pregnancy history to date.

Sarah and Matthew have a beautiful baby girl. Sarah's electronic record is updated with Birth details and baby Hermione is registered and has her own electronic record that is linked to Sarah's through the Birth episode. Midwife A can see that Sarah's pregnancy status has changed to 'Postnatal' on her caseload, and can view the record details. She calls Sarah to offer congratulations.

Sarah and Hermione return home a few days later. Midwife C in Blackpool has contacted Midwife A to confirm Sarah's discharge. An automatic summary is sent to Sarah's GP and Obstetrician. Midwife A can access all of Sarah's discharge details, and books an appointment with Sarah the next day. Sarah can see on her App that an appointment has been arranged for the next day. Midwife A can automatically send Sarah some postnatal and breastfeeding advice to support her.

8. Creating the Future

The digital world is expanding at pace, with world leading organisations taking advantage of new technologies as they emerge. Through improved partnerships with innovative suppliers and organisations we will strive to follow quickly, building proof of concept models and systems to demonstrate new opportunities to colleagues, which may help them to improve patient care and deliver sustainable services. With proven opportunities we will support colleagues to create business cases that deliver the benefits at scale.

If we do not create and shape the future now, it will not happen.

"We will work collaboratively as a learning system, constantly seeking out new technologies to improve health and care outcomes and make better use of our resources".

We will create better **partnerships** between health, universities and industry.

We will make use of Robotic Process Automation and develop 'virtual' workers to complete repetitive tasks, **freeing up time** for staff to focus on activities related to **patient care**.

We will support the **Lancaster University Innovation Health Hub**.

We will use **data science** and **machine learning** techniques to analyse and interpret complex data to create evidence based **insight** into our business and performance.

We will work with colleagues and suppliers to explore **efficiencies** to business and clinical processes through artificial intelligence, computer aided diagnostics and chatbot interfaces.

We will explore the development of algorithms to support referral pathways and patient sign-posting.

We will consider new technologies as they arise, including genomics. We will work closely with Research and Development to identify potential sources of innovation and funding.

We will support the use of technology to monitor and support patients in their own homes.

'Virtual Workers' supporting General Practice.
Asthma reviews can take practices a significant amount of admin time. Automating the process using Robotic Process Automation (RPA) could improve efficiency. A 'virtual worker' powered by the RPA platform could interact with EMIS to identify patients who are due an Asthma review, extract this information and send an SMS Message or eMail directly to the patient. The 'virtual worker' can also receive the responses from the patient and then update EMIS, booking appointments, checking events have occurred and escalating as appropriate. Saving hours of administration.
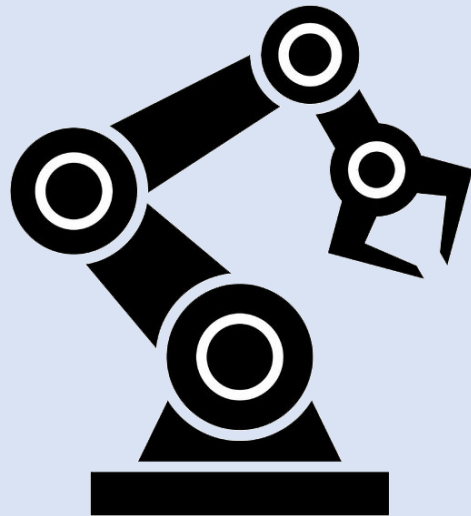
'Virtual Workers supporting Covid-19 anti-body testing.
A new, large scale and ongoing testing programme requires considerable administrative support. Using Robotic Process Automation, the Hospital has been able to reduce the administration required to support Covid-19 anti-body testing and also improve the patient experience.

The patient now completes an electronic form which captures information and preferences and enables the patient to self-service book an appointment slot. The 'virtual worker' picks up these requests and enters the request into the hospital electronic requesting system and sends an email/SMS back to the patient confirming the booking. It also updates the clinic list with the patient. Once the result is available, the 'virtual worker' then sends that back to the patient as an email/SMS – depending on the patients preferences. This has reduced the process from 2-3 weeks to 2-3 days. The 'virtual worker' and the electronic form are available 24hrs a day.

8. Creating the Future

A day in the life of a Thoracic Radiologist.

Dr Smith, radiologist, has arrived to work earlier today. It's the day when he usually reports cases from the Lung Cancer Screening programme, so he needs to get himself a cuppa before he commences his session.

There are usually plenty of scans in the reporting queue since the lung cancer is the number one malignant killer in the whole world. Dr Smith is pleased that the Hospital has recently invested in PACS and AI software which help to deal with the screening task in a smarter way. For example, the PACS app is capable of prioritising the list, highlighting breach dates. The AI app runs in the background and performs image analysis - all suspicious areas will be flagged for radiologist's attention and validation. Interestingly, any lung nodules detected will be automatically measured and recorded so the Radiologist can add the information to the report. If there is any further imaging acquired for this patient the system will not only measure the nodules but record any other changes seen. The Radiologist adds a report to the images and once happy finalises the report which is published to the patients electronic patient record.

A Radiologist's profession requires a constant focus and attention to detail. Dr Smith's day would have been even busier and much more tiring without the assistance of intelligent software.

Utilising Data Science

Dr. Adesh Agate is a GP with a special interest in hypertension, and has a particular interest in population health.
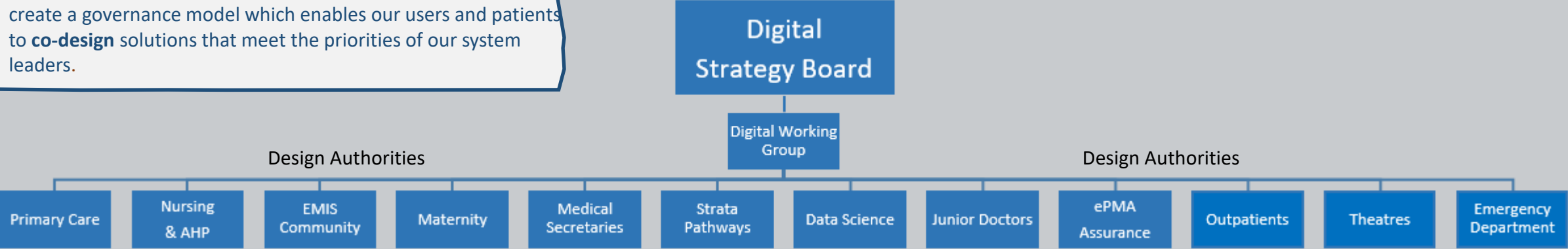
Dr. Agate has agreed to act as the Clinical Lead for a data science project that has the ambition of identifying patients who may develop hypertension symptoms but are not being actively managed by the ICC teams. As clinical lead, Dr. Agate, has work closely with the I3 data scientists to build a data catalogue for hypertension. The catalogue is live and integrates data from a range of clinical systems including primary care, community services, prescribing, social care and acute care. Dr. Agate understands the value of integrating this breadth of data, from many organisations, and recognises that it gives him and colleagues a longitudinal view of citizen health and wellbeing.

As a GP, Dr. Agate is able to log into a hypertension analytical app and analyse the health of the patients under the care of his practice. Sitting behind the app are a series of automated machine learning algorithms that interact with the hypertension data catalogue on a live basis to continuously predict both citizens that may be at risk of developing symptoms and existing patients whose health may be at risk of deteriorating.

Dr. Agate presented the solution to his practice peers last week and there was unanimous agreement that proactive alerts are set up so that all of the GP Team are alerting to patients who are at risk if intervention isn't made. As a result, the ICC Team receive notifications on a daily basis, these are analysed and prioritised lists of patients to contact are created.

9. Delivery and Effective Governance.

To unlock the **enormous potential** digital has to offer, we will create a governance model which enables our users and patients to **co-design** solutions that meet the priorities of our system leaders.
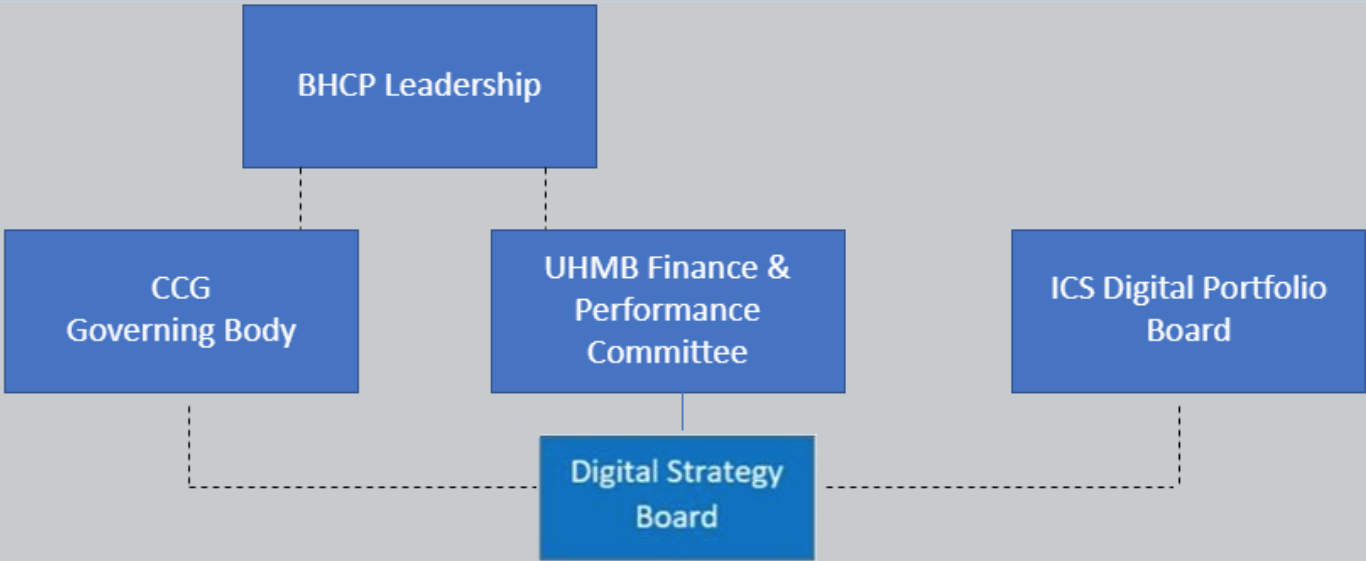
Digital Strategy Board

Digital Working Group

Design Authorities

Design Authorities

| Primary Care | Nursing & AHP | EMIS Community | Maternity | Medical Secretaries | Strata Pathways | Data Science | Junior Doctors | ePMA Assurance | Outpatients | Theatres | Emergency Department |

A new Digital Strategy Board will be re-formed, involving all partners and citizens of Bay Health and Care Partners. This will guide and oversee implementation of this Digital Strategy

A new "Working Group" will be created with senior clinicians and business managers, to prioritise planning and delivery, supervised by the Digital Strategy Board.

We will expand our strong clinical and business foundations, with current and new Design Authorities, with senior systems users from different parts of Bay Health and Care Partners. We will learn from their experiences and design new digitally supported health and care.

9. Delivery and Effective Governance.

The Digital Strategy Board will oversee a delivery plan, which will be transparent to all staff in the Bay.

The delivery plan will build on the successes of systems we have already deployed and commission business cases when appropriate to support additional resource and new systems where we have gaps in capability.

We will develop a culture of self-service with users and process owners encouraged to design their own digital solutions based on the five themes of this digital strategy and to share their successes with others through an online system portfolio.

Project Portfolio

We will develop and publish an online 'live' portfolio of digital projects, with access for all staff across Bay Health & Care Partners to view project objectives, timescales and status.

System Portfolio

We will develop and publish an online portfolio of digital systems which are live and in development across the Bay, to describe clearly the system capability and describe opportunities, dependencies on other systems and examples of good practice.
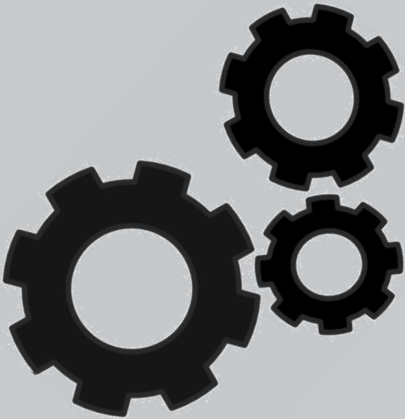
The Digital Strategy Board will set priorities and oversee a Delivery Plan to support the post-pandemic recovery and transformation of services across Bay Health & Care Partners. However, it is anticipated the Delivery Plan will assume the shape and estimated costs (above existing budgets) show in the table below, with an initial phase of exploiting the value of our incumbent digital systems through wider engagement and proof of concept exercises connecting clinicians and empowering patients. Business cases will follow to expand our transformational and development resources to support a deeper, wider adoption across Bay Health & Care Partners culminating in a digital 'Front Door' which is accessible to all our citizens, regardless of ethnicity and age.

Across our ICS Primary Care have already standardised the majority of their clinical systems and the provider organisations must follow suit. Our Digital Leaders are already engaged with colleagues across South Cumbria and Lancashire, developing a roadmap of converged provider clinical systems for our region. The first system to be implemented with a consolidated pan-ICS footprint will be Maternity, scheduled for late 2020.

	Programme Focus	Estimated Cost	
		Cap (£k)	Rev (£k)
Year One (Oct 2020 – Sep 2021)	Engage. Exploit incumbent digital systems, build evidence, document gaps, develop business cases. Implement Office 365 across Primary Care. Implement new Hospital Maternity System. Begin to standardise clinical care pathways. Develop a new programme of education and coaching designed to maximise staff and service user experience and benefit of our digital systems and data. Support agile working.	1200	320
Year Two (Oct 2021 – Sep 2022)	Accelerate the reach and benefits of our digital systems to Morecambe Bay citizens and across a range of Bay Health & Care Partner Services. Prepare to replace Hospital EPR. Continue to educate and coach staff and service users. Support agile working.	1900	1310
Year Three (Oct 2022 – Sep 2023)	Open a digital 'Front Door' to Morecambe Bay citizens for all Bay Health & Care Partner Services. Replace Hospital EPR. Continue to educate and coach staff and service users. Support agile working.	1450	2140
	Total	**3650**	**3770**

11. Your support is vital.

What we can do to support you.

Much of the functionality described in this document is available now. If you have read this document and see potential to re-design your clinical or business processes then you should get in touch with one of the Digital Leads, to the right, who can help assess how we take your ideas forward to solutions. You can find all of the Digital Leads contact details in the Bay Health & Care Partners eMail Directory or email the I3 Business Support Unit at **i3.business.support@mbhci.nhs.uk**.

The capacity of the Information, Informatics & Innovation (I3) department is finite and where appropriate we will support you and your teams with a future project based on existing resource or work with you to create a business case for additional support.

If you have time you can dedicate to the digital agenda and have ideas and opinions you wish to share then your input to one of the **Digital Design Authorities** described in section 9 would be welcome.

If you are passionate on delivering digital benefits across Bay Health & Care Partners then you could be a fantastic **Digital Champion**, linking with the Digital Leads, the I3 department and other like minded individuals to encourage and support others who may be less comfortable with the digital agenda to consider digital solutions to their problems.

What you need to do to support Bay Health & Care Partners.

The digital resource within Bay Health & Care Partners is limited, the possibilities to exploit the digital revolution we are all familiar with in our personal lives to better care for our patients and deliver more efficient services are endless.

To achieve this transformation we need you to:

Be willing to change the way you work and how you deliver services and be patient while new systems bed in.

Engage with digital projects and offer up your valuable experience and opinions to shape the digital solutions we deliver to meet your needs.

See value in becoming an 'expert' in the systems you depend on and make time to learn how to configure your systems to your best suit how you work. Keep up with your training. Strive to learn functionality and share your knowledge with colleagues. Become a **Digital Champion**.

The BHCP Digital Leads

Dr Tim Reynard
GP

Dr Colin Brown
Consultant
Gastroenterologist

Dr William Lumb
GP
Director of Integrated
Community Services

Chief Clinical Information Officers

Andy Wicks
Chief Information
Officer
Bay Health & Care
Partners

Mel Waszkiel
Head of EPR
Programmes

Lee Coward
Head of IT

Matt Ciapa
Digital Lead for Primary
Care & CCG

Rob O'Neill
Head of Information

Marc Hadwin
Head of Digital
Services

Information, Informatics & Innovation (I3)