NHS
James Paget University Hospitals
NHS Foundation Trust

Digital Strategy

2022-2025

April 2022

Contents

Foreword

As CCIO and CNIO, we are responsible for the delivery of digital technology and transformation, providing expert clinical informatics advice and guidance both in our Trust and across the wider health and care system. Technology plays a significant role as a critical enabler for everyone by creating more time to care and we aspire to put information at the fingertips of our clinicians, so our patients only ever have to tell their story once.

The Covid-19 pandemic has demonstrated how we can use technology to rapidly change ways of working and transform service delivery long term. Our mission, via this strategy, is to continue to lead the momentum of digital change to empower clinical teams to provide high quality, safe care for our patients.

We are determined to embed digital across our organisation, in the services we deliver and in how we work with our partners within the Integrated Care System. Integrated care requires integrated digital support, and our system partnership has set out an ambitious goal to achieve this. Data and digital technology are playing a huge role in healthcare reforms and will be key to improving the quality of processes going forward and how data is utilised to eliminate unwanted variation across the system. This will underpin the provision of connected care pathways to the citizens of our Integrated Care System to work towards leveling-up existing geographical health-inequalities.

Whilst national plans are in place to improve the NHS workforce's digital skills, these specialist skills are still in short supply. We are really excited about the opportunity to be part of a new generation of inclusive digital change leaders. Every member of our workforce should have the knowledge, skills, and confidence to embrace the opportunities and benefits of digital technology wherever they work in our hospital. We want to provide digital platforms that are interoperable, secure, and accessible in context within the organisation and in primary and community care to support seamless clinical handovers.

We firmly believe that publishing this strategy will support our ambition to make our organisation the best place to work. Keeping frontline perspectives and priorities at the centre of all our programmes of work and engaging all of our James Paget colleagues every step of the way will help us provide the highest level of patient and staff experience through the use of digital technology.

Reet Johal   *Rachael Rider*

Chief Clinical Information Officer   *Chief Nursing Information Officer*

1   Introduction

This is a time of great change within the NHS generally and for JPUH specifically. Our previous digital strategy 2018-21 has expired and we now need to reset our vision for digital for the future.

We have made good progress towards putting in place the digital foundations to develop our digital maturity. Our digital infrastructure is in good shape, and we are about to roll out a significant quantity of mobile devices to directly support clinical care as part of the electronic observations (EObservations) project. We do however need to enhance our user support arrangements.

Our Strategic Outline Case (SOC) has been approved for a shared Electronic Patient Record (EPR) solution with the other two acute hospitals within the Norfolk and Waveney Integrated Care System (ICS). We are now developing the Outline Business Case and actively progressing readiness activities. This initiative will significantly accelerate our journey towards removing our reliance on paper and improve our ability to communicate effectively with ICS partners, including primary and community care. This, in turn, enables us to support the ICS and Trust clinical strategies in developing cross-organisational pathways and enabling our clinical and operational staff to work effectively from any location within the ICS, or remotely, with access to the full patient record.

With the move from a 'best-of-breed' environment with multiple applications (currently c. 165) towards a single integrated EPR, we will be able to improve the user experience significantly and to streamline our support and training efforts. We will maintain integration with specialist applications outside of the core EPR and with external organisations.

We are also starting to plan now for the opportunities offered by the new James Paget University Hospital, which will be delivered as part of the national New Hospitals Programme (NHP). Although most of the digital technology anticipated for the new hospital will be delivered beyond the timeframe of this strategy, the activities we propose here are all designed to prepare us for that opportunity. As well as the infrastructure and applications (particularly EPR) which we will implement ahead of the new hospital, we will take this opportunity to develop a 'digital-first' culture, where our people across the organisation are digitally literate and well-prepared to accept and exploit digitally enabled transformation.

We have started from a low base. In 2019, JPUH was assessed against the HIMSS EMRAM Maturity Model as having a digital maturity of 0.05 against a national average of 2.3-2.5, and a national target of >5. The NHP includes a strategic objective of HIMMS Level 7 to support a fully digitally enabled hospital. Since 2019, progress has been made across a number of areas, but the Trust remains behind the national average and significantly adrift of either target.

Figure 1.1: High Level Timeline for Digital Strategy below sets out the new phases of development of Digital Strategy at JPUH, with this document setting out the initial "pre-EPR" foundation years:

High Level Timeline for JPUH Digital Strategy

Figure 1.1: High Level Timeline for Digital Strategy
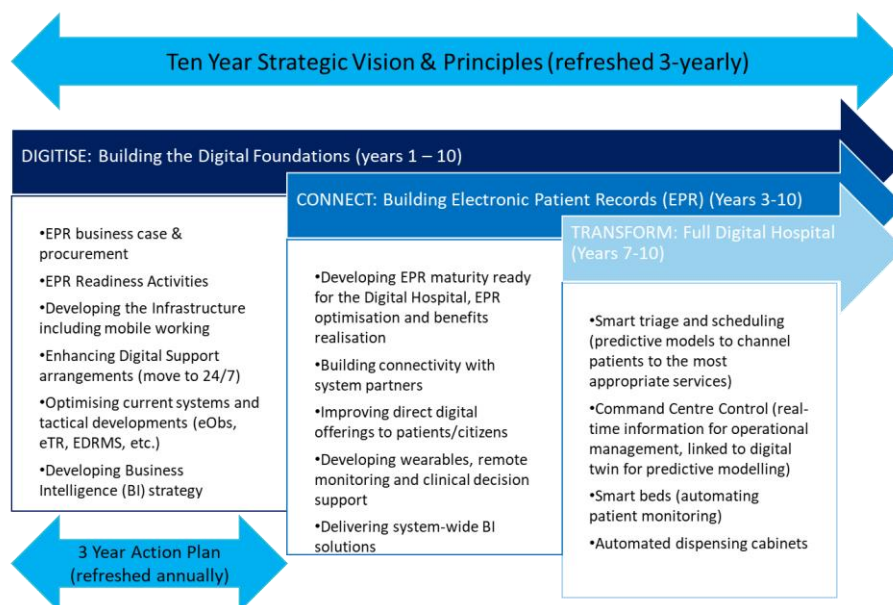
This strategy considers revised national and local strategic context and learning from the ongoing COVID-19 pandemic and is designed to inform the planning for the new James Paget University Hospital as part of the NHP.

In developing this strategy, we have sought views and input from a range of key stakeholders. A full list of interviewees can be found in Appendix A.

1.1   Intention of this strategy

By clearly setting out our Digital Strategy, the following stakeholders will be able to:

Patients and Citizens

- Understand when digital developments are expected
- Influence priorities and design decisions
- Understand how the plans for the new hospital will be supported by modern digital technology

Clinical and Operational Staff

- Understand when digital developments are expected
- Understand how the plans for the new hospital will be supported by modern digital technology
- Be aware and have knowledge of new technologies that could become available to their speciality
- Understand how digital technology can act as an enabler for digital transformation and influence priorities and design decisions

Digital Teams

- Set digital work programmes in line with strategy delivery
- Understand the priorities for their work
- Understand how their work fits into the wider context
- Receive Board-level recognition and endorsement

Boards and Senior Management

- Understand how our digital strategy supports national and local strategic priorities
- Understand the key themes for digital investment
- Understand the high level timeline for delivery of major digital programmes across the ICS
- Endorse the direction of travel for Digital services across the ICS
- Set the framework for approval of future digital investment cases
- Monitor progress towards agreed digital goals
- Be assured that plans for digital developments align with the NHP

1.2   Digital Enablers

The following Digital Enablers were identified by clinical and operational staff in Specialty Development Plans and Workshops:

- Introduction of an EPR: a single integrated solution, shared across the three acute Trusts in Norfolk & Waveney, incorporating information from primary and community care, in which all patient information is visible in a single system (subject to access permissions), with a single solution for clinical documentation, handovers and cross-organisational care pathways
- Sharing of images across partner organisations (shared PACS)
- Clinical support including increased use of telemedicine, including virtual clinics, tele-dermatology, remote capability for the Pre-Operative Enhanced Recovery Programme, remote monitoring for virtual wards and to support patients with chronic conditions, use of wearables and patient-activated recording devices (e.g. ECG), incorporation of clinical decision support, artificial intelligence (AI), and introduction of robotics
- Providing sufficient IT equipment and hardware to meet the changing needs of the services, including across the community teams, including improved Wi-Fi networks for both staff and visitors and provide remote and mobile access to systems
- Staff training relating to Digital Health
- Availability of communication platforms such as virtual consultations and Microsoft Teams
- Rapid access to support for Digital Health issues
- Informatics – current up to date data with good analysis for reviewing against Key Performance Indicators (KPI's) and availability of data to support clinical improvement work streams
- Patient interactive technology, including patient accessible booking, virtual visiting, and digital interactive play equipment for paediatric patients to reduce anxiety and to support recovery in the hospital setting
- Improved e-HR (Human Resources) systems

1.3   Previous JPUH Digital Strategy (2018-2021)

The previous digital strategy set out a number of 'Strategic Deliverables': a series of interlinked projects and significant activities, grouped under themes. These are shown in Figure 1.2: Summary of Digital Strategy 2018-2021 below:

Figure 1.2: Summary of Digital Strategy 2018-2021

Good progress has been achieved during the life of the strategy on many of the elements set out in the previous strategy, particularly those for Supporting Technology and the implementation of Clinical Applications and this gives us good basis on which to build. In particular, progress has been made with the initiation of the EObservations project, a review of the current Electronic Document Management system (EDMS), the delivery of Electronic Test Requesting (eTR), which has been a major step towards enabling digital transactions.

However, one of the main planks of the strategy, the shared Acute EPR programme has been delayed through the business case stages, and the expected start date for the implementation is now April 2023. This will therefore be carried forward into this JPUH Digital Strategy 2022 – 2025.

2   Strategic Context

This section looks at the strategic and policy context in which the Trust operates and identifies areas which this strategy needs to address.

2.1   National Strategic Context

The *NHS Long Term Plan 2019 (LTP)* provides the overarching strategic direction for a new service model which focusses on the treatment of illness through joined-up care across a broad range of organisations in the optimal care setting. It describes the importance of technology in achieving this future NHS; setting out the critical priorities that will support digital transformation and provide a step change in the way the NHS cares for citizens.

The *NHS 2022/23 priorities and operational planning guidance* makes this explicit, including a priority to: *'Exploit the potential of digital technologies to transform the delivery of care and patient outcomes – achieving a core level of digitisation in every service across systems.'* It emphasises the need to use digital to help the NHS address both its long-term challenges and the immediate task of recovering from the pandemic. It states that there will be support for health and care systems to 'level-up' their digital maturity, and ensure they have a core level of infrastructure by 2025.

It describes how NHS organisations must finalise costed three-year digital investment plans by June 2022 which:
- include provisions for managing cyber security risk
- reflect ambitions to consolidate purchasing and deployment of digital capabilities, such as electronic patient records and workforce management systems, at system level where possible
- set out the steps being taken locally to support digital inclusion
- consider how digital services can support the NHS Net Zero Carbon Agenda.

Furthermore, NHS England state: *"…ensuring that staff and patients have access to the right data, at the right time, is vital to the NHS providing effective, safe, good value services. To achieve this, our systems must be digital and interoperable. This means that they are able to talk to each other, so that data can flow seamlessly between different IT systems and across health and care settings."*

In October 2020, the Greener NHS National Programme published its new strategy, *'Delivering a net zero National Health Service'* which highlighted that left unabated climate change will disrupt care, with poor environmental health contributing to major diseases. The 2021/22 NHS Standard Contract set out the requirement for Trusts to develop a Green Plan to detail their approaches to reducing their emissions in line with the national trajectories. A key element of achieving this is the adoption of digital transformation and taking green approaches to the digital services themselves.

In June 2021, the New Hospital Programme (NHP) was established which aims to transform the delivery of NHS healthcare infrastructure to ensure the country has world-class healthcare facilities for decades to come. The embedded digital requirements are explored further in section 2.12 in relation to the James Paget New Hospital programme.

2.2 National Digital Strategic Context – 'What Good Looks Like' (WGLL) Framework

In August 2021, NHSX launched '*What Good Looks Like*' (WGLL) which builds on established good practice to provide clear guidance for health and care leaders to digitise, connect and transform services safely and securely. WGLL is included in the 'NHS Operational Planning and Contracting Guidance', reflecting the expectation that the standards in the framework will be used to accelerate digital and data transformation and improve the outcomes, experience, and safety of our citizens.

The What Good Looks Like (WGLL) framework has seven success measures:

What Good Looks Like NHS

- **Well led:** Our leadership is confident and inspires a culture of digital transformation, data literacy, inclusion, and collaboration
- **Ensure smart foundations:** We have reliable, modern, safe, and resilient infrastructure and data capabilities. We review and continuously improve our core IT and digital services
- **Safe practice:** We ensure that our systems, and our use of technology meets and maintains high-quality safety and service standards
- **Supported people:** Our workforce are digitally literate and empowered to work with data and technology systems - and we can work frictionlessly across our ICS
- **Improve care:** We make the best use of technology and data to transform care pathways across our ICS
- **Healthy populations:** We have an effective strategy to encourage innovative thinking, developing new models of care informed by data insights and digital capabilities
- **Empower citizens:** Citizens are at the centre of our service design. We ensure that our digital services suit all health literacy, inclusion and demographic needs

Of particular relevance for the Trust Digital Strategy, WGLL advises that organisations must:

- maintain a central, organisation-wide, real-time electronic care record system
- extend the use and scope of Trust electronic care record systems to all services, ensuring greater clinical functionality and links to diagnostic systems and electronic prescribing and medicines administration (EPMA)
- contribute data to the ICS-wide shared care record
- ensure compliance with NHS national contract provisions for technology-enabled delivery (for example, clinical correspondence and electronic discharge summaries)
- ensure clinical systems and tools meet clinical safety standards
- have a plan to get off and stay off unsupported systems
- ensure that the systems that Trust staff use are intuitive and easy to use
- support staff to work flexibly, remotely, and across multiple wards or sites
- use digital communication tools to enable self-service pathways such as self-triage, referral, condition management, advice, and guidance
- ensure that people can access and contribute to their own health and care data

Speaking at a conference in February 2022, the Secretary of State for Health and Social Care said that he wants 90% of NHS trusts to have an electronic patient record (EPR) in place by December 2023, with the remaining 10% in the process of implementing them.

2.3   National Data Strategy: '*Data Saves Lives*'

The 2021 DHSC policy paper '*Data saves lives: reshaping health and social care with data*' states:

> "*When facing the greatest public health emergency that this country has tackled for generations, one of the most impactful tools at our disposal was the power of data…Data was essential to our day-to-day response. And it powered vital research that helped us discover new treatments that saved lives in communities across the world.*
> "***Data made all the difference***."

'*Data saves lives*' aligns with the government's National Data Strategy, and What Good Looks Like (WGLL). It sets out the vision for the future of health and adult social care data and the commitments required to achieve that vision. It highlights the importance of Cybersecurity and introduces the concept of separating data from the application, specifically for Electronic Patient Records (EPRs).

There are three key priorities which underpin the national data strategy:

- to build understanding on how data is used and the potential for data-driven innovation, improving transparency so the public has control over how we are using their data
- to make appropriate data sharing the norm and not the exception across health, adult social care, and public health
- to build the right foundations – technical, legal, regulatory – to make that possible.

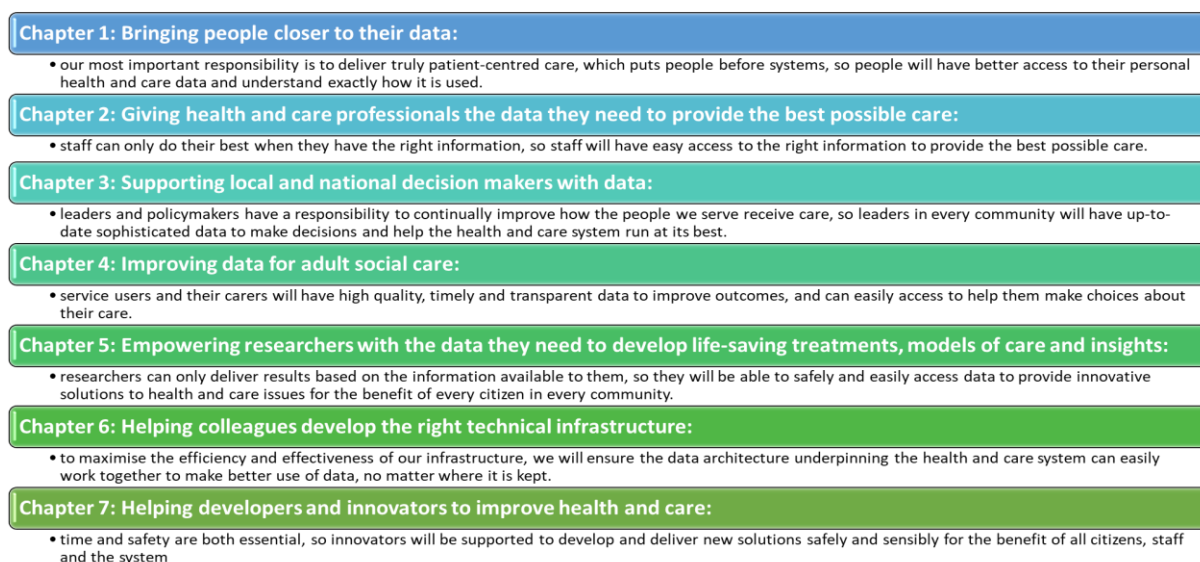The areas covered are shown in Figure 2.1: Summary of 'Data saves lives' below:

Chapter 1: Bringing people closer to their data:
- our most important responsibility is to deliver truly patient-centred care, which puts people before systems, so people will have better access to their personal health and care data and understand exactly how it is used.

Chapter 2: Giving health and care professionals the data they need to provide the best possible care:
- staff can only do their best when they have the right information, so staff will have easy access to the right information to provide the best possible care.

Chapter 3: Supporting local and national decision makers with data:
- leaders and policymakers have a responsibility to continually improve how the people we serve receive care, so leaders in every community will have up-to-date sophisticated data to make decisions and help the health and care system run at its best.

Chapter 4: Improving data for adult social care:
- service users and their carers will have high quality, timely and transparent data to improve outcomes, and can easily access to help them make choices about their care.

Chapter 5: Empowering researchers with the data they need to develop life-saving treatments, models of care and insights:
- researchers can only deliver results based on the information available to them, so they will be able to safely and easily access data to provide innovative solutions to health and care issues for the benefit of every citizen in every community.

Chapter 6: Helping colleagues develop the right technical infrastructure:
- to maximise the efficiency and effectiveness of our infrastructure, we will ensure the data architecture underpinning the health and care system can easily work together to make better use of data, no matter where it is kept.

Chapter 7: Helping developers and innovators to improve health and care:
- time and safety are both essential, so innovators will be supported to develop and deliver new solutions safely and sensibly for the benefit of all citizens, staff and the system

Figure 2.1: Summary of 'Data saves lives'

2.4   Sustainable ICT and digital services strategy: targets for 2020-2025

In October 2020, the Greener NHS National Programme published its new strategy, '*Delivering a net zero National Health Service*'. This report highlighted that left unabated climate change will disrupt care, with poor environmental health contributing to major diseases, including cardiac problems, asthma, and cancer. The report set out trajectories and actions for the entire NHS to reach net zero carbon emissions by 2040 for the emissions it controls directly, and 2045 for those it can influence (such as those embedded within the supply chain).

The 2021/22 NHS Standard Contract set out the requirement for Trusts (and subsequently ICSs) to develop a Green Plan to detail their approaches to reducing their emissions in line with the national trajectories. A key element of achieving is the adoption of digital transformation and taking green approaches to the digital services themselves.

In September 2020, the Government published its strategy for sustainable ICT and Digital Services. The objectives it sets out to deliver the vision set by the strategy are:

1. **Reduced carbon and cost** – making sustainability central to the procurement, design, and management of digital services to reduce costs and carbon. Wherever possible, waste is removed from the system - for example, redundant services, duplicate files, legacy ICT systems and hardware, promoting shared systems and services.
2. **Increased resilience** - buying smarter through the adoption of the gold standards and actively mapping and tracing service supply chains.
3. **Increased responsibility – doing the right thing** – embedding the message of the responsible digital citizen, with all end users helping to deliver the strategy targets and objectives through improved behaviours. Sustainability must be a key component of design, delivery, and implementation as well as evaluation scores in procurement exercises.
4. **Increased transparency and collaboration** - the information and data required to report progress towards net zero and other key sustainability commitments is available and openly published.
5. **Increased accountability -** visibility of sustainable ICT performance is increased across government.

The draft JPUH Green Plan includes specific objectives for the role of Digital, for example: to '*Encourage hot-desking, home working and the use of digital meetings to reduce commuting and business travel.*' It should also be updated to explicitly address sustainability of ICT services in line with the guidance above.

2.5 Norfolk & Waveney (N&W) Integrated Care System (ICS) Strategy

The Norfolk and Waveney Integrated Care System is made-up of a wide range of partner organisations, **working together to help people lead longer, healthier, and happier lives.**

In response the Government's February 2021 White Paper "*Integration and innovation: working together to improve health and social care for all*", which sets out proposals for a Health and Care Bill based on increased integration and collaboration, and reducing bureaucracy, Norfolk and Waveney ICS has developed a five-year plan for improving health and care: '*A healthier Norfolk and Waveney 2019-2024*'. This plan identified three goals and five strategic changes, including an emphasis on exploiting technology to modernise health and care services, as shown in Figure 2.2: ICS Goals & Strategic Changes below:
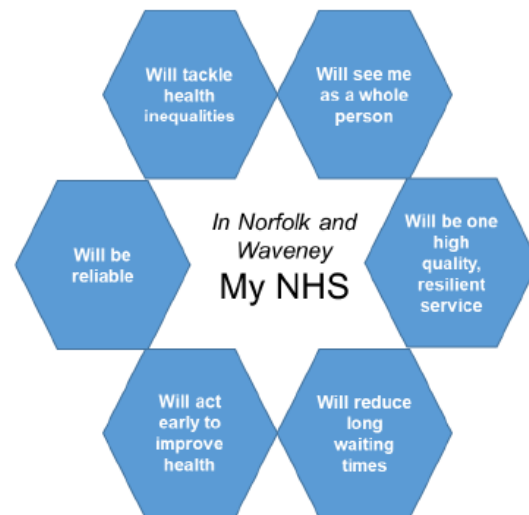

Figure 2.2: ICS Goals & Strategic Changes

Like all Integrated Care Systems in England, the Norfolk & Waveney ICS has an overarching purpose to:

2.6   Norfolk & Waveney (N&W) Integrated Care System (ICS) Clinical Strategy

The ICS has also developed a clinical strategy which contains six statements that describe what the plan will try to achieve.

The ICS Clinical Strategy describes the views obtained from users and providers of clinical services. It identifies that:

- Two great enablers clinicians and patients want to see used more are digital innovation and population health management.
- Patients and the public recognise that the NHS has delivered more care in new ways during the pandemic. Many GP and hospital consultant consultations switched from face-to-face to "virtual" in the form of telephone or video consultations. Both the public and clinicians recognise the value in this new flexibility and speed of diagnosis it can offer. There is support for other innovations such as "virtual wards" where, for example, a patient is discharged home and wears a device so that they can be monitored remotely by their hospital or GP.
- There is an expectation that the NHS will provide more services through forms of digital innovation. Both groups are clear that such developments should not be "one-size fits all." That both patient and clinician will need the freedom to exercise their clinical judgement about whether an appointment should be in person or virtual, or that remote monitoring will work for some patients but not others.
- Clinicians are convinced that the NHS in N&W needs to be more systematic and rigorous in identifying communities and patients with the greatest health needs so that they can be targeted for help earlier. Many are enthusiastic advocates of the use of what are called population health management tools to do this.

The '*ICS Clinical Services Strategy Development System Leader Engagement Report June 2021*' states that one transformative enabler mentioned by nearly every interviewee was what has been achieved through the greater use of digital technology and other forms of virtual contact with patients and between clinicians and managers. It identifies as a key area of clinical focus:

> **To use digital innovation** – or indeed just the basic digital tools already "out there" – to enable more clinically appropriate patient consultations, virtual wards, home monitoring – combined with patients better educated in the understanding and management of their conditions, and to manage meetings more efficiently between health and care staff

Key recommendations from the Clinical Leaders include:

- **Importance of professional clinical judgement in the application of digital technologies:** The future use of digital platforms and other forms of virtual engagement and monitoring need to be flexible to allow professional clinical judgement to inform where, when and with which patients it is suitable and not suitable and, crucially, this may change depending upon the nature of a patient's condition and where they are on a clinical pathway.

- **Continue the digital transformation for patients:** the momentum behind phone and video triage must continue in primary and secondary care and be formalised, although not in a way that restricts clinicians from deploying their judgement when it comes to deciding when an in-person face to face appointment is required. This is likely to be driven by condition, patient point on a pathway and individual circumstances such as access to and comfort in the use of digital technology.

- **Continue the digital transformation for meetings and other events involving** staff and partners delivering healthcare. There is a feeling that it could really bear the lion's share of these contacts although there's a view that some particularly sensitive meetings and where relationships are being established will still need to be in person

2.7   ICS Digital Strategy

The vision statement for the draft ICS Digital and Data Strategy is:

> *"To work together to use digital and data to enable a person-centred approach that positively transforms the health outcomes for the people of Norfolk and Waveney".*

The draft strategy identifies six themes, which map to the themes within the What Good Looks Like (WGLL) framework (which are also the themes in this JPUH Digital Strategy 2022-2025 document):

WGLL Theme	N&W ICS Strategic Theme
Empower citizens	A: Person-centred Digital
Support people	B: Digital Productivity
Ensure smart foundations & Safe practice	C: Equalising digital maturity
Improve care	D: Improving quality of care
Health populations	E: Harnessing data
Well-led	F: Harmonising digital across the ICS

Working with the Trusts, the draft ICS digital strategy sets out plans to deliver a number of transformational digital programmes:

- A shared EPR will replace many separate clinical systems and digitise paper-based processes
- A Shared Care Record (SCR) will provide access to patient information from the region's Health and Care sector
- A Health and Care Data Archive (HCDA) will support Trust and region-wide advanced analytics
- A Patient-held record will allow patients able to update their own information, submit real-time care data, book their referrals and visits, and interact with their clinicians
- Virtual consultations will be extended to enable more home-based patient engagement
- Remote monitoring and self-care will become more widespread, with patients' homes becoming virtual wards
- Robotic Process Automation will automate the regular high-volume processes and pathways, freeing up caregivers so they can undertake more patient facing activity or complex work
- AI technologies will be used across a range of new health treatments, research, and care.

2.8   Norfolk and Waveney Hospitals Group

The three acute Trusts within Norfolk and Waveney (including JPUH) have developed a governance structure which will enable them to work together and better align aspects of decision making, including overseeing the development of the single hospital clinical services strategy for Norfolk & Waveney and aligning key clinical and non-clinical policies, procedures, and protocols. They have responsibility for establishing joint large-scale strategic projects (including the Acute EPR

programme) and guiding the consolidation of some corporate support functions in order to promote consistency and, where possible, release efficiencies.

2.9   The COVID-19 Pandemic

NHS Providers1 state:

> "Across the NHS, the pandemic fuelled years' worth of progress on digital transformation in a few weeks. Trusts have rapidly delivered digital alternatives to face-to-face interactions, improved data sharing and new ways of working."

COVID-19 has accelerated three emerging trends that are critical if digital teams are to flourish:

- **Pace**: Extended governance processes and sign-off procedures were replaced with more autonomy and authority delegated to teams charged with delivering prototypes, testing, and experimenting with different approaches before rolling them out to the wider organisation. It involved more ruthless prioritisation to focus on fewer projects at once.
- **Purpose**: The NHS rallied around a clear and unifying goal, with a new culture and willingness to accept digital technologies. Solutions were identified by clinical and operational teams in the same room as their digital colleagues. One Chief Information Officer (CIO) said, "*this placed the levers of control in the hands of the customer*," putting digital at the heart of delivering the organisation's core purpose, rather than sitting off to the side.
- **Priority**: The introduction of gold and silver command and control structures thrust Digital into a far more central role in the Trust's activities. Many CIOs reported having unprecedented access to chief executives to expedite approvals and unblock problems.
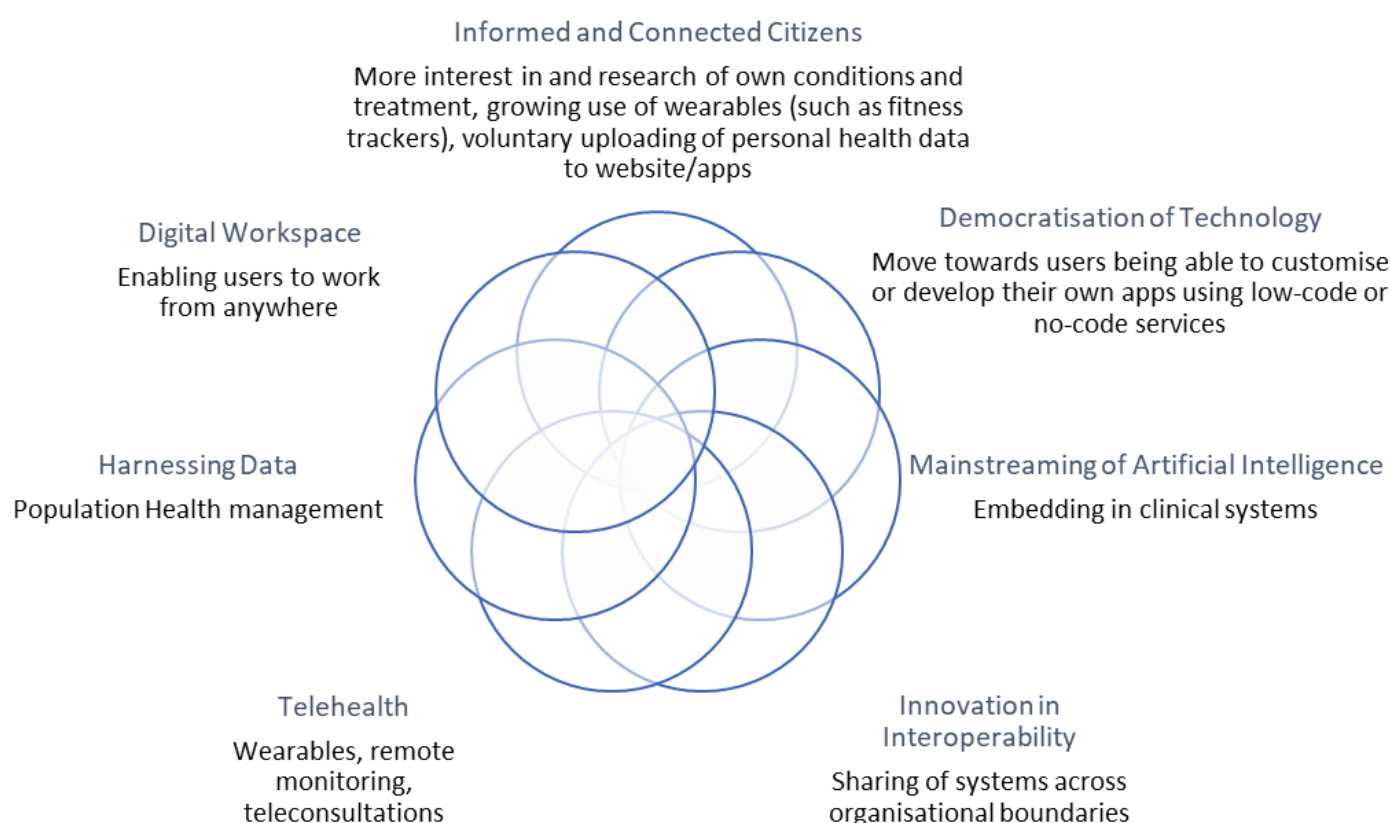
At JPUH, during the pandemic, we took the opportunity to accelerate many innovative and new ways of working, including virtual consultations for outpatients, which will become how we do things as we move into a new normal. We identified the following key features:

- Willingness of users to adopt digital technology ("pull") and tolerance of teething problems
- Rapid deployment of digital capability (solutions, devices etc.) to support new requirements and new ways of working
- Highly effective working with technology partners to deploy technology quickly
- Acceleration of key 'paperless' projects which had previously lacked the required momentum.
- In house developments of new systems and extensions to existing services
- Greater use of mobile technologies and solutions due to limitations in supply chain of traditional desk-based devices

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[1] Nhsproviders.org. 2021. *Building and enabling digital teams*. [online] Available at: <https://nhsproviders.org/building-and-enabling-digital-teams/what-did-covid-19-change> [Accessed 3 July 2021].

2.10 Key Technology Trends in Digital Healthcare

The NHS does not exist in a bubble, and trends in technology in general provide opportunities for us to utilise emerging technologies in new ways to achieve our goals. It takes time for new technologies to be applied in useful ways, so we need to ensure that our strategic portfolio includes some projects which prepare us to adopt the innovations as they become mainstream. As noted in the introduction to this strategy, to succeed, we need to aim high. This section sets out some key technology trends as identified by thought leaders in this area and suggests ways in which they may be applied in our Trust:

Informed and Connected Citizens
More interest in and research of own conditions and treatment, growing use of wearables (such as fitness trackers), voluntary uploading of personal health data to website/apps

Digital Workspace
Enabling users to work from anywhere

Democratisation of Technology
Move towards users being able to customise or develop their own apps using low-code or no-code services

Harnessing Data
Population Health management

Mainstreaming of Artificial Intelligence
Embedding in clinical systems

Telehealth
Wearables, remote monitoring, teleconsultations

Innovation in Interoperability
Sharing of systems across organisational boundaries

Emerging technologies are now reaching levels of reliability and ubiquity that enable them to be applied in a range of settings in a healthcare environment. For example:

- Speech Recognition has now improved to a level at which passive conversation monitoring in consultation rooms would be possible to add full conversational recording and transcription into EPR

- Artificial Intelligence (AI) is used for improving diagnosis from imaging such as PACS, automating the management of limited resources such as theatre times and outpatient appointments, and supporting the creation of clinical documentation by pulling together information from a variety of systems (using Robotic Process Automation (RPA).

- Connected devices supporting care at home and virtual ward projects to reduce hospital stay and monitor patients' conditions from home can initially take the form of standalone devices and apps on personal phones to input data with subsequent automated data analysis and AI used to notify clinicians of trends or raise alerts outside of approved thresholds. This can be extended to utilise wearable devices and smartphones to share activity data from patients directly with those caring for them with appropriate permissions.

- The Internet of Things (IOT) enables a range of smart devices to share information about their usage. For example, IOT kettles can provide useful information from patients' homes about whether they are moving around their house normally, their fluid intake etc.

- Faster authentication using biometrics and multi factor authentication allow a single login to provide access to the right information from anywhere based on a risk profile built upon location/time of day/common working patterns/device

- Drones and automated systems are capable of physically moving resources such as drugs and patients around the site. Automatic restocking and ordering of consumables and drugs from cabinets becomes possible, based on electronic 'near field communication' (nfc) tags and barcodes that can be tied into a single unified system.

2.11 JPUH Trust Strategy

The Trust has identified the following four ambitions at a corporate level:

The Trust has also developed a clinical strategy with the following vision:

"Putting patients first - providing high quality acute clinical services to support our communities to live a healthier life"

The clinical strategy has three themes and three supporting principles (see Figure 2.3: JPUH Clinical Strategy below) with a clear focus on increased partnership working across a fully integrated health and care system within Norfolk and Waveney.
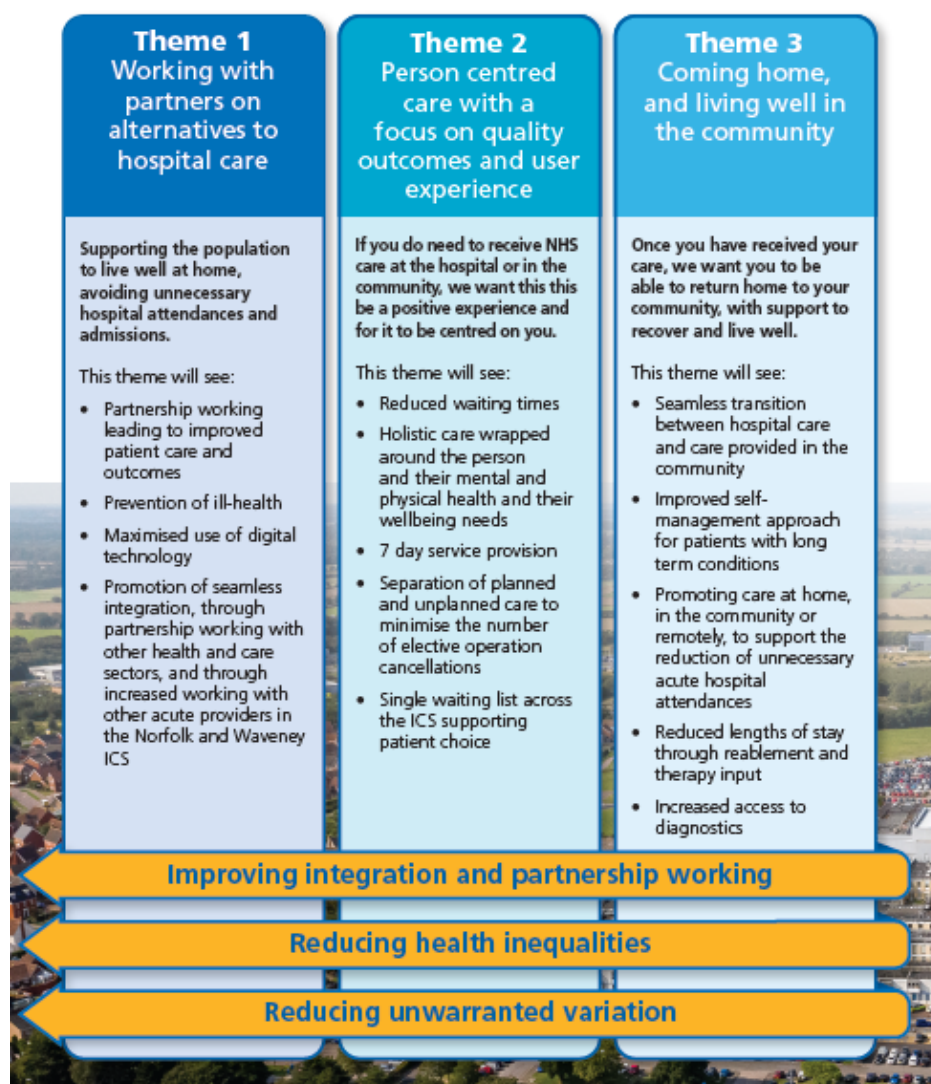

Figure 2.3: JPUH Clinical Strategy

In relation to Digital Health, the Trust Clinical Strategy states:

> "Our aim is to keep our services person-centred and fully inclusive, tackling health inequalities locally and in line with the national priorities, using the enablers of digital technology, modern adaptable infrastructure, an engaged and evolved workforce and contribute towards our research ambitions. The Covid pandemic has shown us what is possible in terms of successful rapid transformation of services, including virtual clinics, to enable patients to access our services from home or within the community. We have the opportunity to embed and progress these developments and ensure they become business as usual."

It is clear that this JPUH Clinical Strategy aligns with the Norfolk & Waveney Integrated Care System (ICS) Clinical Strategy and is supportive, and indeed also requires, the parallel development with this Digital Strategy to achieve success.

2.12 JPUH Trust Estates Strategy and The New Hospital Programme (NHP)

The James Paget University Hospitals NHS Foundation Trust's (JPUH) Estates vision is to develop a modern health and care campus specifically designed to serve the region for the following 40 years, through our New Hospital Programme (NHP) adjacent to the main hospital site. Among other objectives, it intends to "…align with and support delivery of the Trust's New Hospitals Programme including **advancing use of digital…**"

The Trust Estates Strategy aligns to the ICS Estates Vision which is:

> *"To provide a safe, functionally suitable and **digitally-enabled** estate that allows for the delivery of the right care in the right place, accessible to patients and allowing better patient outcomes."*

The strategy describes an estate which is "conducive to provision of digitised care". It intends to develop a resilient and digitised estate to support remote consultations, separation of flows and to sustain elective services in case of another pandemic. The development and extension of digitally enabled outpatient care would bring care closer to home and create additional capacity on our hospital sites. A further objective is to develop digital smart with infrastructure planning and modelling established as a mainstream skill set in our workforce.

A key element in achieving the estates strategy will be the planning and building of a new hospital. This will provide a physical and digital environment which enables staff and patients to fully benefit from new digitally enabled models of care. It will:

- support provision of care that goes beyond the boundaries of the trust, enabling clinicians to deliver services where most appropriate and convenient
- engage patients fully in the management of their care with self-service capabilities and multiple channels of communication with their clinicians
- leverage real-time data, monitoring, and AI to provide the highest quality, tailored treatments

The NHP is to be aligned with the 2020 Cabinet Office publication *'The Construction Playbook'* which includes more Modern Methods of Construction (MMC), the achievement of Net Zero Carbon targets and the embedding of digital technology, with additional guidance on NHP requirements relating to these elements is anticipated during 2022/23. In addition, the NHSx Digital Blueprint describes three sets of features:

- *Fabric* – which deals with delivering resource-efficient and sustainable buildings providing personalised experiences to staff, patients, and their carers
- *Footprint* – which deals with the interaction of the new build (site) with the wider care ecosystem
- *Flow* – which deals with the operating model of the establishment to describe the clinical pathways and governance surrounding it

Fabric
Much of the Fabric is delivered through the core design and build contract, in response to a number of key digital requirements:

- *Connectivity* - mobile-first high bandwidth connectivity for patients, staff, and devices in all areas, with segmented logical networks for each of these uses, and resilience and redundancy
- *Compute and storage* – a 'cloud-first' assumption implies reduced requirement for data rooms, but increased requirement for fully redundant high bandwidth external HSCN/Internet connections
- *Mobile end-user devices* – to deliver ease and flexibility in the use of clinical solutions
- *Improved acoustics / microphones* – to support voice recognition in clinical areas
- *Cyber* – Security applied at device-level, not just boundary protection
- *Location tracking* – hospital-wide capability for tracking patients, staff, and equipment
- *Smart buildings management* – monitoring and control systems to manage the environment effectively

Footprint
Many core elements of the inter-connected nature of JPUH are already being addressed through local and regional initiatives (e.g. Shared Care Record, integration engine, remote monitoring, and telemedicine). The new hospital will, however, deliver significant improvements in support for both staff and patients:

- *Digital signage and digital wayfinding* – to improve the patient experience in finding their ward and clinic room, whilst also enabling dynamic re-assignment of rooms to meet demand
- *Bio-metric identification* – for rooms and electronic devices/computers, to deliver the maximum security with the minimum of impact on clinical workflow
- *Integrated bedside terminals* – supporting patients and nurses by providing convenient access at every bedside
- *Real-time location systems* – to enable location of staff, patients and equipment in part mitigating the workforce increases often associated with the new single rooms environment
- *Digital workplace* – provision of physical and virtual collaboration platforms for staff within and beyond the hospital

Flow

With the delivery of Electronic Patient Records (EPR), Electronic Prescribing and Medicines Administration EPMA, Electronic Document and Records Management System (EDRMS) and Analytics all planned for before the new hospital, the foundations for managing clinical workflows will be in place. The role of the new hospital will be to advance the use of these digital technologies, reducing the burden on clinicians and improving patient care. Key new solutions will include:

- *Smart triage and scheduling* – to apply AI / predictive models to channel patients to the most appropriate services and reduce the impact of cancellations / no shows
- *Conversational agents* – automating EPR processes with ambient voice recognition, removing the EPR as a barrier to patient interaction and reducing the administrative load on clinicians
- *Control Command Centre* – linking clinical, operational, and environmental dashboards to enable real-time management of the hospital
- *Digital Twin* – enabling patient flow modelling, linked to the Control Command Centre, to assess the impact of hospital configuration changes before they are made
- *Smart Beds* – to provide continuous monitoring of patients and automated alerts, improving care and potentially mitigating the workforce increases often associated with the new single rooms environment
- *Automated dispensing cabinets* – to improve safety and tracking of medications

Specific actions arising from the JPUH Estates strategy are:

- Move to a single digital infrastructure model to allow for interoperability across the system by all providers

- Implement an easy-to-use desk/room booking mobile app to ensure improved utilisation

- Commission integrated wayfinding for larger buildings to facilitate multi-use rooms directly into the tenants' appointment systems or manually updated by the main reception

- Utilising digital tools that support a preventative healthcare model

- Providing multi-use flexible use rooms, hot desking, digital pods, MDT VC/training rooms and interview e-consult rooms

- Analysis required of systems used, information held, and investment made in managing the range of platforms for individual providers to plan and form a digital strategy and action plan for the period of the estates strategy

Some of these developments will be delivered as part of the new hospital which is beyond the life of this strategy document. However, we will ensure that digital strategy continues to evolve and stay in alignment with NHP during the preparatory phases and will focus on delivering the pre-requisite technologies, clinical applications, and digital transformation. This will be supported by ongoing engagement with the national NHP team and the learning that we can benefit from as being a Phase 4 Full Adopter hospital in the NHP.

3   Digital Strategic Vision

Our JPUH Digital Strategic Vision is:

"Providing digital solutions that work together across the Trust and with our system partners to create a single source of information; enabling high quality care provision, improving the working lives of our people, enhancing patient experience and supporting our citizens to improve their health."

In order to make this vision a reality, we have developed an action plan, grouped into seven themes based on the success factors included in the '*What Good Looks Like*' (WGLL) digital framework:

Digitise

Well Led: Our leadership is confident and inspires a culture of digital transformation, data literacy, inclusion, and collaboration

Ensure Smart Foundations: We have reliable, modern, safe, and resilient infrastructure and data capabilities. We review and continuously improve our core IT and digital services

Safe Practice: We ensure that our systems, and our use of technology meets and maintains high-quality safety and service standards

Connect

Support People: Our workforce are digitally literate and empowered to work with data and technology systems - and we can work frictionlessly across our ICS

Empower Citizens: Citizens are at the centre of our service design. We ensure that our digital services suit all health literacy, inclusion and demographic needs

Transform

Improve Care: We make the best use of technology and data to improve care pathways across our ICS

Healthy Populations: We have an effective strategy to encourage innovative thinking, developing new models of care informed by data insights and digital capabilities

Chapter 4 of this document, develops these strategic themes. The key elements of each theme are:

1: Well-led	Developing the Board-level and user engagement we need to develop a digital culture and ensure Digital Health is well-governed
2: Ensure smart foundations	Complete procurement and implementation of shared Electronic Patient Records (EPR) Infrastructure planning and upgrading Modernising telephony

	Investing in the Digital teams
3: Safe practice	Cyber-security Information Governance Embedding best practice in Digital management
4: Support people	Developing a digital-first culture Data, digital and cyber security literacy Service Desk Enhancement and 24/7 Support Services
5: Empower citizens	Working with ICS to develop Citizen Engagement and Digital Inclusion Strategies Further developing the requirements for the Patient Portal element of the EPR Contributing to the ICS Shared Care Record project for citizen access
6: Improve care	Implementing and optimising clinical application including EObservations, Electronic Tests and Results (eTR), Electronic Prescribing, telemedicine applications (including virtual clinics, patient wearables, etc).
7: Healthy populations	Interaction with the Trust's Business Intelligence function. Contributing to the ICS Health and Care Data Architecture (HCDA) project.

4 Key Strategic Themes

4.1 Well-led

What Good Looks Like (WGLL) Success Factor 1: Well-led states:

> *Boards are equipped to lead digital transformation and collaboration. They own and drive the digitally enabled transformation journey, placing citizens and frontline perspectives at the centre.*

At JPUH we have recognised that digital transformation is essential to our success as an organisation. We currently have strong board-level accountability for digital provided through the leadership of our Director of Strategic Projects. Digital Health is led by an Associate Director and steered by a senior digital health programme team which comprises executive, clinical, nursing, and operational representation as set out below:

Figure 4.1: Digital Health Leadership

The Associate Director of Digital Health role is shared with NNUH and the EPR Programme Director is shared across all three acute Trusts in Norfolk and Waveney. This is in line with our intention to become more strategically aligned across the ICS.

Business Intelligence (BI) is currently managed separately from Digital Health, headed by the Head of Business Intelligence reporting to the Chief Operating Officer. We will review this approach during the life of this strategy as the disciplines of BI and Digital Health become more closely intertwined with the production of BI coming increasingly technical and the focus for Digital needing to be on the production and use of information.

Digital Health strategy is managed through the Digital Transformation Committee, with the governance structure set out in Figure 4.2: Digital Health Governance:
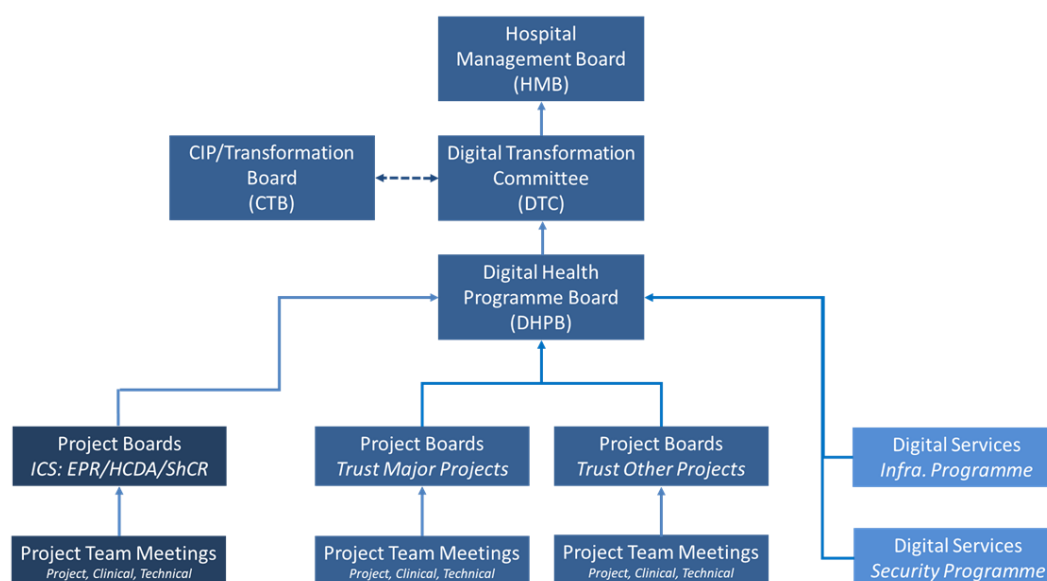

Figure 4.2: Digital Health Governance

At JPUH, we are committed to engaging clinical representatives at the heart of our digital developments. Wide clinical and operational engagement was obtained in the development of this strategy and the identification of digital requirements for the New Hospital Programme, as set out in section 2.12 JPUH Trust Estates Strategy and The New Hospital Programme (NHP). The Acute EPR programme has also engaged extensively with representatives from across the organisation to identify the benefits required from that investment and clinical application implementations are managed with clinical leadership.

In order to ensure that our Board is kept apprised of Digital Health initiatives and to enable them to participate meaningfully in managing digital health strategy, we will establish a programme of governance to ensure that key digital health topics are addressed regularly. We will also work closely with the Communications team to develop an engagement plan to involve and inform our key stakeholders.

Key actions arising:

- Establish a programme for board governance that regularly reviews digital strategy, cyber security, services, delivery, and risks, underpinned by meaningful metrics and targets

- Developing an annually refreshed Digital Communications plan to include:

o Quarterly Board development sessions at which key Digital topics and risks are discussed on a rolling agenda

o Regular engagement with clinical and nursing forums led by the CCIO and CNIO

o Annual engagement events with frontline users, patients, and citizens

o Develop a programme for Digital Health end-user education and support

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4.2   Ensure Smart Foundations

What Good Looks Like (WGLL) Success Factor 2: Ensure smart foundations states:

> *"Digital, data and infrastructure operating environments are reliable, modern, secure, sustainable, and resilient. Organisations have well-resourced teams who are competent to deliver modern digital and data services."*

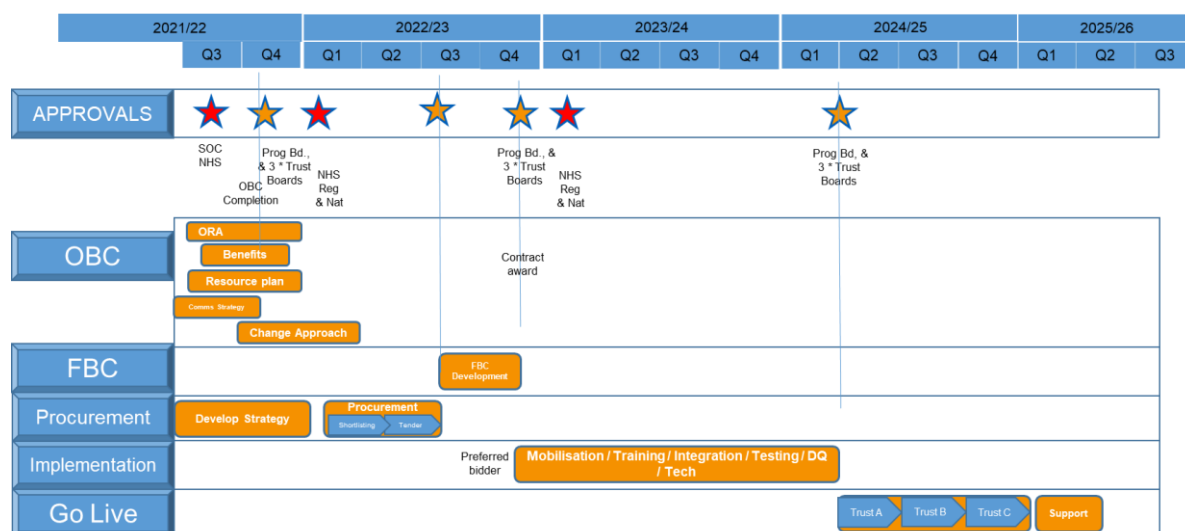A number of major projects for JPUH contribute to this WGLL Success Factor. They are:

- The shared acute EPR programme, meeting the following objectives:
  - maintain a central, organisation-wide, real-time electronic care record system
  - extend the use and scope of electronic care record systems to all services, ensuring greater clinical functionality and links to diagnostic systems and electronic prescribing and medicines administration (EPMA)
  - substantially reduce the portfolio of clinical applications managed by the Trust as this functionality is provided by the single integrated EPR
  - contribute data to the ICS-wide shared care record in line with the Professional Records Standard Body's (PRSB) Core Information Standard
- Modernising telephony - removing fax machines and non-emergency pagers, and maximising use of modern telephony and communication methods, in particular in the context of planning for the new hospital
- Infrastructure planning – including
  - have a plan and move to cloud data hosting and management where practical
  - maintain a robust and secure network
  - ensure hardware, software and end user devices are all within the suggested supplier life cycle and fully supported
  - ensure staff have access to the technology and devices that best support their roles
  - ensure progress towards net zero carbon, sustainability and resilience ambitions by meeting the Sustainable ICT and Digital Services Strategy (2020 to 2025) objectives
- invest in and build multidisciplinary teams with clinical, operational, informatics, design, and technical expertise to deliver the Trust's digital ambitions

4.2.1   The Shared Acute EPR programme

The three acute Trusts in Norfolk and Waveney are working together to procure and implement a single modern integrated Electronic Patient Record (EPR) solution, shared across the three Trusts. The vision is that an EPR will act as an enabler for a greatly improved health care system in which care givers and patients have electronic access to more complete health records and are empowered to make better health decisions with this information. An EPR system contains patient-centric, electronically maintained information about an individual's health status and care and focuses on tasks and events directly related to patient care. The EPR provides support for all activities and processes involved in the delivery of clinical care.

A Strategic Outline Case (SOC) for the programme was approved by Trust Boards in late May and early June 2021 and was given approval by the DHSC and NHSE&I in November 2021. An Outline Business Case (OBC) is currently being developed with dialogue continuing with NHSE & I about timescales and funding.

The indicative timeline for the procurement and implementation is shown below:

The EPR will replace many of our existing clinical and operational systems, enabling us to simplify our support arrangements and provide a safer, more joined-up user experience.

An 'Organisational Readiness Assessment' (ORA) is being undertaken currently to assess our readiness to implement and realise the benefits from an integrated EPR. This covers Organisational, Technical, and Data readiness assessments. Alongside this, work is underway to identify and validate potential quality and quantifiable benefits for inclusion in the business case and to focus implementation efforts. Actions will undoubtedly arise from these activities which will be included in an updated implementation plan for this strategy as part of the annual refresh.

Key actions arising for this strategy are:

- Participate fully with the other two acute Trusts in the development of the EPR business case and the procurement of a suitable supplier

- Complete the EPR Benefits Identification and Validation Activities. Complete and maintain a Benefits register and focus on achieving the identified benefits

- Complete the EPR Organisational Readiness Assessment and implement the recommendations

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4.2.2   Modernising telephony

Telephony has historically been managed by the Estates department. Telephony is now primarily a digital server-based technology, and it is proposed to move support and development into the Digital Health department, hence its inclusion in this strategy.

In early 2021, a review of the Trust's telecommunications services was commissioned from Apira, an external consultancy. Key findings from that report were:

- Whilst the current telephony system will be supported until 2030, it will not provide the range and depth of functionality required for the new hospital. A hybrid cloud solution (Primary cloud with on premise resilience) supporting a full range of telephony and collaboration services will be the preferred solution architecture, in line with digital infrastructure principles.
- The current position is that we are in dispute with supplier due to lack of delivery around the contact centre and failed implementation of Wi-Fi enabled handsets
- A pager replacement project is underway to implement a mobile App based technology to allow clinicians to securely communicate and escalate patient information to provide immediate diagnosis and intervention if required.

Key actions arising for this strategy are:

- Complete the transfer of responsibility for telecommunications from Estates to Digital Health

- Develop and implement a telephony upgrade programme of works

- Provide a comprehensive support capability for telephony

- Develop a comprehensive telecommunications strategy for the deployment of a modern telecommunications environment ahead of the move to the new hospital

- Ensure that that the telecommunications strategy fully addresses requirements for mobile and remote working

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4.2.3   Infrastructure Planning

Underpinning all of our ambitions for achieving digitally enabled transformation is the requirement for essential infrastructure to be modern, fit-for-purpose, secure and future-proofed. One of the impacts of the Covid-19 pandemic has been to accelerate the move to flexible and remote working, increasing the demand for online collaboration and teleconferencing tools such as Microsoft Teams and virtual visiting. We need to support this, and the ever-increasing reliance on digital technologies for the delivery of clinical care and running of the hospital by ensuring that our underlying server, network, and end user device services provide a fast, intuitive user experience that fits around the way people want and need to work today.

We have made good progress in developing the foundations of our infrastructure. We already have very good wireless network (Wi-Fi) coverage, and our back up has moved to using cloud technologies although our main storage remains on premises currently.

An organisational and technical readiness review has been conducted in advance of the EPR programme and the findings are expected imminently, but we believe that our infrastructure is in a good state of readiness. The main gaps relate to digital support for staff mobility. These will start to be addressed as part of the eObservations project with 700-800 iPhones being deployed as part of the pilot from April 2022.

We need to address immediately the upgrade of our server environment. We have moved to a virtualised server environment in which systems and services share physical servers and operating environments. However, the software we use to manage this is reaching the end of its life and is causing multiple service outages. We therefore need a major infrastructure upgrade which will encompass a move to the industry-leading virtual platform and update our datacentre switching.

Key actions arising for this strategy are:

- Review network demand and performance and identify any further required enhancements

- Roll out mobile devices to users as part of eObservations project

- Complete virtual server platform and datacentre switching upgrades

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4.2.4 Developing the Digital Teams

The ICS is leading on the development of digital services collaboratively as a system to drive efficiency, innovation, and transformation and to create positive digital experiences. There is support for this initiative however there is a strong feeling currently for a matrix, trusted relationship rather than a formal 'Shared Service'. At JPUH, we have indicated our support for the first stage of this two-phase plan over an 18-month period to July 2023 as set out below:

Phase 1: Create the Foundations

- Commencement of a Joint Digital Management Board, chaired by the ICS CIO, agreement of 22-23 capital and revenue identification, prioritisation, and consolidation of Services (8 months)
- Set up a matrix structure across organisations to support both system and organisational needs
- Focus on areas where working together addresses system priorities and/or are already in flight e.g.:
    - Analytics and Insights, Information Governance, Registration Authority, Business Intelligence Services, Development, Procurement, Transformation, Central Digital Programme Office, and Cyber Security.
    - Work on the data mapping and data architecture, creation of the N&W Health and Care Data
    - Architecture to get to 'single version of the truth,' which also supports population health management, direct care, research, data sciences and wider organisational and system efficiencies.

Phase 2: Jointly Provisioned Service (8 - 18 months)

Unify digital services by joint provision, with the unified resources supporting the implementation of
- ICS-wide data structures
- consolidated and integrated clinical applications
- delivery of system programmes
- be responsible for all infrastructure, systems, support, development, processes, resources, governance, delivery, and digital transformation.

Within the Trust, we have identified the following actions to develop the local Digital Health team:

o   Ensuring that all staff in Service Desk, Desktop support, Networks and Server teams are qualified in the best practice IT Infrastructure Library (ITIL) framework for managing digital services effectively throughout the five stages of the IT service lifecycle: service strategy, service design, service transition, service operation and continual service improvement

o   Delivering appropriate Microsoft training to staff in Service Desk, Desktop support, Networks and Server teams

o   Develop a sustainable workforce, with linkages to the UEA and local colleges, working with systems partners, apprenticeships, succession planning and talent management to grow our workforce.

Key actions arising for this strategy are:

- Engage with partners across the ICS in implementing the first phase of the ICS Unified Digital Service and further developing and specifying Phase 2

- Complete ITIL training and implement compliant procedures across the Digital Health Service

- Complete the Microsoft training programme for technical staff

o   Complete and annually refresh a training needs analysis and address findings for all Digital Health team members

4.3   Safe practice

What Good Looks Like (WGLL) Success Factor 3: Safe practice states:

> *"Organisations maintain standards for safe care. They routinely review digital and data systems to ensure they are safe, robust, secure, sustainable, and resilient. Digitally enabled outcome-driven transformation is at the heart of safe care."*

The Trust IT Security Strategy 2021-2023 was approved in October 2021. The IT Security team successfully completed its Cyber Essentials Plus Certification and is now working towards achieving the ISO27000 accreditation. Through this process, the current IT Security Strategy and associated policies and procedures will be reviewed and updated to ensure that:

- all Trust projects and programmes meet the Technology Code of Practice and are cyber secure by design
- we comply with the requirements in the Data Security and Protection Toolkit which incorporates the Cyber Essentials Framework
- we make full use of national cyber services provided by NHS Digital
- we have a secure and well-tested back-up, a plan to get off and stay off unsupported systems
- our process for managing cyber risk with a cyber improvement strategy, investment and progress is regularly reviewed at board level
- we establish a clear process for reviewing and responding to relevant safety recommendations and alerts, including those from NHS Digital (cyber), NHS England and NHS Improvement, the Medicines and Healthcare Products Regulatory Agency (MHRA) and the Healthcare Service Investigation Branch (HSIB)
- we ensure clinical systems and tools meet clinical safety standards as set out by the Digital Technology and Assessment Criteria (DTAC) and DCB0129 and DCB0160.

Standards DCB0129 and DCB0160 set out the clinical risk management framework to ensure the highest standards of quality in the NHS with respect to digital health system assessment and deployment. This standard model of digital project management / methodology will be implemented to ensure that all digital projects follow a prescribed lifecycle that is focussed on managing and minimising clinical risk.

We will ensure that our cyber security and clinical safety functions are adequately resourced. Current key cyber-security roles include:

- Senior Information Risk Owner (SIRO) – Director of Strategic Projects
- Data Protection Officer (DPO)
- IT Security Manager
- Clinical Safety Officer (CSO) – CCIO

Best practice methodologies for the management of Digital Health services will be adopted. In addition to ITIL adoption set out in section 4.2.4, the use of AGILE development and Project Management tools to support better management, planning and management resources will be explored. We will improve documentation in all areas of Digital Health management and align our project and programme documentation to PRINCE2 and MSP (Managing Successful Programmes).

The department is currently partially ITIL and PRINCE2 aligned but this is not fully embedded. The Trust's current digital project management model is based on the principles and methodologies of PRINCE2. However, some project managers require PRINCE2 practitioner re-certification, and we need to introduce the formal Managing Successful Programmes (MSP) certification to add greater sophistication in managing allied programmes of work e.g. infrastructure, security and application-layer projects and the wider ICS programme portfolios.

We currently have a very small Digital Health PMO. This will need to be expanded to manage our increasingly complex portfolio of digital initiatives safely and effectively.

Key actions arising for this strategy are:

- Update the Trust IT Security Strategy 2021-2023 to cover the actions from WGLL

- Develop a Clinical Safety Strategy to cover standards

- Develop a professional project and programme management training programme to:

  o ensure all Digital Health project managers have current PRINCE 2 accreditation

  o ensure all Digital Health programme managers are MSP accredited

  o ensure project and programme management is aligned to PRINCE and/or MSP

- ensure clinical systems and tools meet clinical safety standards

- Expand and develop the Digital Health PMO

4.4   Support people

What Good Looks Like (WGLL) Success Factor 4: Support people states:

> *"Your workforce is digitally literate and are able to work optimally with data and technology. Digital and data tools and systems are fit for purpose and support staff to do their jobs well."*

We intend to create a culture in which our people think "digital first", where important information is documented directly into clinical and operational systems, and we look to eliminate the use of paper as far as possible. We aim that Digital is seen as a "positive disruptor", opening up the possibilities of doing things differently through the use of digital technology.

In order to increase the levels of digital adoption, we will identify "digital ambassadors" within each speciality area. These individuals will act as a link between the operational services and the digital teams, feeding back requirements and priorities, and sharing innovative improvement ideas from frontline health and care staff. They will also act as knowledgeable ambassadors for digital. They will be supported with the skills and access they need to help resolve minor issues, escalate unresolved issues, and support staff in developing their own digital skills. They will be encouraged to maintain their digital personal development and supported to attend conferences, site visits, etc. in order to understand and promote 'the art of the possible'.   The Digital Ambassadors will be a mixture of new roles and volunteers to be identified as part of the Digital Transformation activities.

We will support all staff to attain a basic level of data, digital and cyber security literacy, followed by continuing professional development. This training should be delivered in partnership with the People and Culture Department, and we will work together closely to develop an appropriate programme and present a business case for additional funding if required.

We will build in usability standards into locally developed applications and include these in procurements to ensure that the systems that staff use are intuitive and easy to use. By consolidating separate applications into the EPR, we will reduce the number of different systems and user interfaces that people need to learn.

We will support staff to work flexibly, remotely, and across multiple wards or sites through the rollout of mobile technologies and work with partners across the ICS to join up networks and standardise on digital equipment and systems.

We will provide front-line staff with the information they need to do their job safely and efficiently at the point of care, for example access to the ICS shared care record as it becomes available and e-HR support (see section 4.4.1).

Finally as we progress towards digital technologies and systems becoming more mission-critical within the Trust, we will work towards establishing a 24/7 comprehensive user and technical support service.

4.4.1 Access to the ICS Shared Care Record (ShCR)

Sharing of patient records continues to be an on-going problem across the ICS, with health and care staff having to make decisions without comprehensive information or needing to wait for relevant information to be received before taking action or patients being asked for the same information at each point of contact with health and care services. This can result in delays along the patient's journey through health and care. The roll out of the ShCR will be an important milestone in Norfolk and Waveney as it will provide our health and care professionals with the opportunity to access patient records from other services, previously unseen. By having this information made available, it will improve clinical decision making, reduce time spent by front line staff obtaining vital information and will improve conversations with our patients and citizens, enhancing the quality and timeliness of the services we provide.

The ICS Shared Care Record ShCR is currently in the procurement phase, with full mobilisation with the selected supplier scheduled to start in April 2022. The ShCR will be populated with the acute data that we have already planned to provide via the Digital Aspirant-funded integration architecture to the ICS HCDA (Health and Care Data Architecture) by the end of March so this should not require any additional effort from the Trust at this stage.

Access for our staff to the ShCR will include a wide range of information from across primary care, community, mental health, and social care as well as data from the other acute Trusts in the ICS. This will be provided either through a web-based browser or via link from our TPP Core solution and in the longer term, via our new shared acute EPR.

4.4.2 Access to Digital Workforce systems (eHR)

The JPUH People and Culture Strategy 2020 to 2025 includes the following actions for Digital:

- Enhance the use of TRAC in recruitment to achieve wider benefits of the system and streamlining the recruitment process for permanent and bank staff
- Further develop Health Roster to roll out and achieve:
  - E-Roster for doctors
  - Sickness recording – all staff
  - Reduced agency costs
  - Live rostering – handheld devices
- Review of ESR and achieve manager self-service
- Roll out e-learning across the Trust adopting national online training
- Develop HR automation through the Transformation Programme to reduce transactional processes, align e-Roster, ESR and Payroll and reducing back-office costs
- Digitisation of corporate records Business Case.

4.4.3 Service Desk Enhancement

Currently the Service Desk operates from 07:30-17:00 M-F excluding bank holidays and weekends. It provides a three-tier on-call service for a limited list of supported applications and services, with access to vendor-provided 24x7x365 cover to respond to critical incidents for some major systems.

As the Trust increasingly moves to an environment in which digital services are absolutely essential to the provision of safe clinical care and the operation of the hospital, an enhanced service management function becomes critical.

The service desk is partially aligned to the ITIL collection of best practices in IT service management that is designed to manage risk, improve customer experience, and enable business change. Over the next twelve months, we plan to adopt new ITIL processes and workstreams around Release, Asset and Problem management.

As a single entity, we are too small to be able to effectively manage and staff our own 24/7 support function, therefore we propose to work with partners across the ICS to develop this function as part of our preparation for the implementation of EPR.

> ***Key actions arising for this strategy are:***
>
> - Create 'Digital Ambassador' roles and develop induction/ongoing support programme
>
> - Develop a programme (and business case for funding if required) to support all staff to attain a basic level of data, digital and cyber security literacy, followed by continuing professional development
>
> - Build usability standards into developments and procurements
>
> - Support the roll out of HR systems including TRAC, E-Roster, ESR and e-learning
>
> - Improve alignment to ITIL best practice for service management
>
> - Work with ICS partners to develop 24/7 digital support services

4.5   Empower citizens

What Good Looks Like (WGLL) Success Factor 5: Empower citizens:

> *"Citizens are at the centre of service design and have access to a standard set of digital services that suit all literacy and digital inclusion needs. Citizens can access and contribute to their healthcare information, taking an active role in their health and wellbeing."*

The Trust's Communication Strategy 2020/21 includes key messaging around the use of digital technology:

> **We're harnessing the latest technology to ensure our patients receive an efficient and effective service.**
>
> **(Communications Objectives 1, 2, 3, 7, 8, 9)**
>
> Technology helps us see patients more quickly and efficiently.
>
> Our patients are welcoming this technology as it means they can stay in touch with their healthcare professionals more easily – without having to come into hospital.
>
> The technology is easy to use and intuitive, meaning it is accessible to a wide range of patients.
>
> Technology is also joining our healthcare services together so that, wherever a patient accesses help within the system, their history is available to clinicians – 'telling their story once'.

Attend Anywhere.

Figure 4.3: Extract from Trust Communications Strategy 2020/21

Working with the ICS, we intend to develop a strategy for citizen engagement and citizen-facing digital services that is led by and has been co-designed with citizens. This will make use of national tools and services (the NHS website, NHS login and the NHS App), supplemented by complementary local digital services to provide a consistent and coherent user experience.

The EPR will include a Patient Portal enabling our patients to update their own information, submit real-time care data, and book their referrals and visits. The intention is to develop this to:

- use digital communication tools to enable self-service pathways such as self-triage, referral, condition management, advice, and guidance
- ensure that people can access and contribute to their health and care data
- ensure that citizens have access to care plans, test results, medications, history, correspondence, appointment management, screening alerts and tools

The ICS also plans to lead development of a Digital Inclusion Strategy during 2022, which will incorporate initiatives to ensure that digitally disempowered communities are better able to access and take advantage of digital opportunities. The Trust will participate fully in this initiative.

Finally, the ICS Shared Care Record project has plans to include the opportunity for citizen access within its scope.

> **Key actions arising for this strategy are:**
>
> - Work with the ICS to develop comprehensive Citizen Engagement and Digital Inclusion Strategies
>
> - Further develop the requirements for the Patient Portal element of the EPR
>
> - Contribute to the ICS Shared Care Record project to exploit opportunities for citizen access

4.6   Improve Care

What Good Looks Like (WGLL) Success Factor 6: Improve Care states:

> *"Health and care practitioners embed digital and data within their improvement capability to transform care pathways, reduce unwarranted variation and improve health and wellbeing. Digital solutions enhance services for patients and ensure that they get the right care when they need it and in the right place."*

We are moving towards an environment in which clinical interactions can be documented electronically, removing the need for paper. This will enable those involved in the care of a patient to share information effectively, with greater accuracy and in a timely way, with each other and with the patient themselves. We can plan for a new hospital environment which does not need to cater for the management and storage of paper.

The improved communication between teams arising from the sharing of electronic information can contribute to reductions in length of stay, more timely discharges, and more efficient 'flow' through the hospital, and hence to a reduction in the built environment required for wards and beds. Additionally, the managed digital transfer of care out of the hospital environment can be supported by remote monitoring and 'virtual wards' so that patients need to spend less time in hospital but can be supported in their own homes and community environments.

The ability to provide remote/virtual consultations and pre-outpatient screening, coupled with the ability for patients to book follow-up appointments themselves, only if and when needed, can help to reduce the need for outpatient space.

The use of wearable devices can improve the quality of care and the patient experience, for example, by monitoring patients remotely to detect and avoid falls and/or deteriorations in existing conditions. This can lead to reductions in the cost of providing treatment within hospital and in the community, as well as helping patients to experience a greater quality of life and avoid harm.

The implementation of the shared Acute EPR solution (see section 4.2.1: The Shared Acute EPR programme) will support Trust's ambition to use digital solutions to improve care, using data and digital solutions to redesign care pathways across organisational boundaries to give patients the right care in the most appropriate setting.

In addition, the Trust has initiated a number of other projects which will provide support in the interim, or alongside the EPR solution in promoting safer care. Specifically these are:

- Electronic Tests and Results (eTR): The electronic requesting of Pathology and Radiology tests will enable the Trust to reduce large volumes of paper produced in the Trust on a daily basis, reduce duplicate test requesting, negate transcription errors and streamline Pathology and Radiology processes, offering a better service for clinical staff and patients. The solution, Clinisys ICE, is also used at NNUH, QEH and the Norfolk & Waveney GP Practices, which begins

to align these systems and processes across the ICS ahead of the move to the shared EPR. The project went live in the summer of 2021. Great Yarmouth & Waveney GP practices will move to referring Radiology orders via ICE in the coming months for ordering and results management.

- eTR – Endoscopy: this electronic scheduling system will significantly reduce the risk of missed diagnosis resulting from lost or mishandled referrals and increase efficiency of processing requests with associated improvements to turnaround times.

- Electronic Prescribing and Medicines Administration (EPMA): EPMA is now available across all areas of the hospital and for all medicines (i.e. including infusions etc). Next steps include the use of automated cabinets to store medicines to improve audit trails, access via fingerprint recognition and to automate re-ordering. We are moving towards closed loop dispensing in which bar codes are used to confirm the identity of the patient and the drug and to confirm that it is the correct drug for the correct patient and to automatically update the medication record. A dedicated IT professional will be recruited within the pharmacy team to manage the pharmacy IT systems.

- e-Observations - The Trust set an aspiration to deliver electronic observations (eObs) at pace, with a pilot to be established by the end of the 2020/21 financial year. The approved business case noted that "observations data in digital form enables considerable opportunity for a systematic approach to the clinical response, escalation and management of deteriorating patients." Two pilots will be established initially, in the Emergency Department and in Maternity which will test a range of Apple mobile devices and, in Maternity, will update through direct connection to patient monitoring devices.

- Shared Radiology Information system (RIS)/Picture Archiving and Communication system (PACS): The OBC for Norfolk & Waveney Diagnostic Assessment Centres describes a two-phase approach to the digital aspects of that programme. Phase 1, which is covered by that business case, involves the interoperability of current Trust PACS/RIS solutions with sharing between Trusts facilitated by a Vendor Neutral Archive (VNA) and access into adjacent systems being permitted across the ICS. Phase 2 looks to introduce a single system wide RIS & PACS which is integrated with the EPR.

- Electronic Document and Records Management (EDRMS) – the Trust has implemented an EDRMS into which all patient records are scanned at the end of each episode of care. This system is used to provide access into the stored health care record. The system is out of its warranty period and now requires a major upgrade. The hardware needs to be replaced, and it gives the Trust the opportunity to accept the latest version of the supplier's solution called CITO. CITO provides a new user interface and faster retrieval of documents. Options are currently being considered for introducing additional functionality at the time of the upgrade depending on the timescales and expected functionality of the shared acute EPR.

- Telemedicine: a number of solutions to provide remote consultations, monitoring, and care services, promoting patient choice and sustainability, have been identified. These include virtual clinics and video consultations– these solutions were rolled out rapidly during the initial response to the pandemic. During the life of this strategy, we will identify other telemedicine projects to pilot and explore such as remote monitoring of patients, the use of wearables and patient-activated recording devices (e.g. ECG), the incorporation of clinical decision support, artificial intelligence (AI), and support for robotics. Specific requirements included in Divisional work plans include Tele-dermatology, remote capability for the Pre-Operative Enhanced

Recovery Programme, remote monitoring, use of wearables and patient-activated recording devices (e.g. ECG), incorporation of clinical decision support, artificial intelligence (AI), wearables and support for robotics.

Key actions arising for this strategy are:

- Implement Closed Loop Prescribing

- Implement E-Observations

- Implement Phase 1 of the DAC RIS/PACS developments

- Participate in the planning and development of single system wide RIS/PACS

- Explore opportunities to exploit telemedicine and clinical decision support solutions

4.7   Healthy populations

What Good Looks Like (WGLL) Success Factor 7: Healthy populations states:

> *"Organisations use data to inform their own care planning and support the development and adoption of innovative ICS-led, population-based, digitally-driven models of care."*

Our Business Intelligence (BI) team intend to provide timely, accurate data in interactive way to support decision-making within the Trust and across our ICS partners. To achieve this, we intend to develop a single point of access to information, likely to be via a Trust intranet page, to PowerBI analytic dashboards. Over time, we are working to provide a single shared instance of the PowerBI tool across the ICS with access to shared ICS-wide data.

A separate BI strategy will set out the steps to achieving this single point of access, to a single version of truth to enable ease of access and confidence in the information provided. This is underpinned by our existing Data Quality strategy.

We will contribute data and resources to the ICS-wide population health management platform (Health Care Data Architecture, HCDA) and use this intelligence to inform local care planning and to support the implementation of new ICS-led pathways and personalised care models that use digital platforms to coordinate care seamlessly across settings.

We will adopt the principles from the national data strategy, '*Data saves lives*' as shown below:

The 'Data Saves Lives' strategy sets out the key data architectural principles to be followed:

- All data will be validated at the point of entry to improve data quality
- All data will be made discoverable - a catalogue of all data will help it be easily discovered and reused across all appropriate settings, where information governance allows.
- Data will not be duplicated across disparate repositories - Data will stored once and shared, with availability and performance guaranteed for users across the system.
- All clinical data stored will be made accessible to patients, their carers, and clinicians using a standard suite of APIs (Application Programming Interfaces)
- People will be able to self-manage any data relating to contact details and preferences
- Organisations should be able to self-manage any data relating to them, e.g. locations and types of services offered
- Data should be digitally signed to an appropriate level

Key actions arising for this strategy are:

- Develop an overarching Business Intelligence Strategy

- Contribute data and resources to the ICS HCDA programme

5 Summary of Action Plan

Figure 5.1: Summary Action Plan below shows a high-level view of the three-year action plan:

Success Factor	Action	2022/23	2023/24	2024/25
1	Establish a programme for board governance	x	x	x
1	Developing an annually refreshed Digital Communications plan	x	x	x
1	Develop a programme for Digital Health end-user education	x		
2	Participate fully in the development of the EPR business case and procurement	x	x	x
	Complete the EPR Benefits Identification and Validation Activities.	x		
2	Complete the EPR Organisational Readiness Assessment and implement the recommendations	x		
	Complete the transfer of responsibility for telecommunications from Estates to Digital Health	x		
2	Complete outstanding actions relating to the 'telephony replacement project'	x		
2	Develop and implement a telephony upgrade programme of works		x	x
2	Provide a comprehensive support capability for telephony		x	
2	Develop a comprehensive telecommunications strategy			x
2	Ensure that that telecomms strategy fully addresses requirements for mobile and remote working			x
2	Review network demand and performance and identify any further required enhancements	x		
2	Roll out mobile devices as part of eObservations project	x		
2	Virtual server platform and datacentre switching upgrades	x		
2	Engage with ICS partners in implementing the ICS Unified Digital Service	x	x	
2	Complete ITIL training and implement compliant procedures across the Digital Health Service	x	x	
2	Complete Microsoft training programme for technical staff	x		
2	Complete and annually refresh a training needs analysis and address findings for Digital Health team	x	x	x
2	Update the Trust IT Security Strategy 2021-2023 to cover the actions from WGLL	x		
2	Develop a professional project and programme management training programme	x	x	
3	Ensure clinical systems and tools meet clinical safety standards	x		
3	Expand and develop the Digital Health Programme Management Office (PMO)	x	x	
3	Create 'Digital Ambassador' roles and develop induction/ongoing support programme	x		
3	Support all staff to attain a basic level of data, digital and cyber security literacy	x		
4	Build usability standards into developments and procurements	x	x	x
4	Support the roll out of HR systems including TRAC, E-Roster, ESR and e-learning	x		
4	Improve alignment to ITIL best practice for service management	x	x	
4	Introduce 24/7 digital support services		x	x
4	Work with the ICS to develop comprehensive Citizen Engagement and Digital Inclusion Strategies	x	x	
4	Further develop the requirements for the Patient Portal element of the EPR		x	
5	Contribute to the ICS Shared Care Record project to exploit opportunities for citizen access		x	x
5	Implement Closed Loop Prescribing			x
5	Implement E-Observations	x		
6	Implement Phase 1 of the DAC RIS/PACS developments	x	x	
6	Participate in the planning and development of single system-wide RIS/PACS			x
6	Explore opportunities to exploit telemedicine and clinical decision support solutions		x	x

Figure 5.1: Summary Action Plan

6 Strategy Refresh

This strategy document will be renewed every three years to ensure that we remain aligned with the developing EPR and New Hospital Programmes. The three-year workplan will be refreshed annually along with a report on progress to date. Progress against the workplan will be monitored through the Digital Transformation Committee.

Appendix A: Stakeholder Input

The following stakeholders were interviewed:

Deputy Medical Director

Chair, Board of Directors

Associate Director of Digital Health

Director of Strategic Projects

Operations Director: New Hospital Programme

Programme Director, Strategic Estates: New Hospital Programme

Non-Executive Director

Head of Digital Programmes

Director of Nursing and Patient Safety

Head of Performance and Informatics

Head of Digital Services

Director of Finance

Director of Strategy and Transformation

Chief Nursing Information Officer

Chief Clinical Information Officer and Consultant

Operations Director: Digital Programme and Chief Operations Information Officer - EPR

Additionally presentations were made to the following groups and their views sought:

Weekly meeting of the COO, DCOO & DODs –

Chief Operating Officer

Deputy Chief Operating Officer

Divisional Operations Director (Surgery)

Divisional Operations Director (Medicine)

Operations Director: Digital Programme and Chief Operations Information Officer - EPR

Deputy Divisional Operations Director (Surgery)