NHS
Doncaster and Bassetlaw Teaching Hospitals
NHS Foundation Trust

Digital
Strategy

2021 - 2024

Patients | People | **Performance** | Partners | Prevention

DBTH Digital
Transformation
programme

Contents

A foreword

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Making the very best use of technology to provide the very best care.

Digital Transformation within our Trust has made a significant impact upon our services within the past 24 months, enhancing the care we provide to those staying with us.

Undoubtedly, COVID-19 has underlined the importance of making the very best use of digital systems in all walks of life, and it is crucial that we further accelerate the pace of Digital Transformation within our hospitals, and we believe we set out this ambition within the following pages.

It is our vision 'to be the safest Trust in England, outstanding in all that we do'. To achieve this, we must make the very best of technology, to improve, develop and enable much of the work which will allow us to reach this goal - ultimately ensuring that we deliver the very best patient care and treatment.

We have been significant strides since beginning this journey in earnest in 2018. With the introduction of projects such as 'eObservations' and NerveCentre, we have embedded technology in our daily work, supporting our clinicians and enhancing their work.

We have also worked hard to tie together disperate systems, joining-up our services to ensure that colleagues feel comfortable using new technology and don't view it as just another unwelcome or difficult to use addition to their working lives. And herein, we believe, lies the success of our Digital Transformation programme.

Undoubtedly, we have made good progress on our digital journey, however, we still have a way to go before we are entirely digital. The coming months and years will see a gradual move away from 'traditional' ways of doing things - digitising our processes wherever appropriate.

We have our work cut out, but we are confident that the team are more than a match for the task ahead and we look forward to further Digital Transformation successes within DBTH in the weeks, months and years to come.

Our digital vision

'We will deliver digitally enabled services which provide exceptional care, quality and safety for our patients, a single view of information for our clinicians, with collaboration at our core'.

Our vision
The ambition of the Trust

True north
How we arrive at our vision

Breakthrough
How we will move to deliver our True North in **2020/21**.

To be the safest trust in England, outstanding in all that we do.

Objective one: To provide outstanding care and improve patient experience.

Objective two: Everybody knows their role in achieving the vision.

Objective three: Feedback from staff and learners in top 10% in UK.

Objective four: In recurrent surplus to invest in improving patient care.

Objective one: Achieve measurable improvements in our quality standards and patient experience.

Objective two: Achieve a 5% improvement in our staff having a meaningful appraisal linked to our vision.

Objective three: The Trust is within the top 25% for staff and learner feedback.

Objective four: Every team achieves their financial plan for the year.

We care

People

Performance

Patients

Qi

Partners

Prevention

Our Foundations

About the Trust

Doncaster and Bassetlaw Teaching Hospitals NHS Foundation Trust (DBTH) is one of Yorkshire's leading acute trusts, serving a population of more than 420,000 across South Yorkshire, North Nottinghamshire and the surrounding areas. Hosting three main hospital sites and several additional services, the Trust employs over 6,500 staff and is one of only five Teaching Hospitals in Yorkshire. Objective. Following an inspection by the Care Quality Commission (CQC) the Trust was rated a 'Good' overall in February 2020.

Doncaster Royal Infirmary
A large acute hospital with over 600 beds, a 24-hour Emergency Department (ED), and trauma unit status.

Bassetlaw Hospital
An acute hospital with over 170 beds, a 24 hour Emergency Department and Obstetric service.

Montagu Hospital
A small non-acute hospital with over 50 inpatient rehabilitation beds, day case and outpatient facilities.

National context

NHS Long-Term Plan

The NHS Long-Term Plan is the blueprint to make the NHS fit for the future and developing digital technology is at the centre of this. It outlines an ambitious transformational shift to a digitally focused NHS – from a new NHS app, to digitising care information and creating joined up systems that share information.Delivering this will require new technologies, but also a real culture change in the use of those technologies in our Trust.

Topol Review

The recent review explores the potential that digital advancement holds for the NHS workforce. It examines the possibilities that genomics, digital medicine, AI and robotics holds for the NHS, estimating that within 20 years, more than 90% of NHS roles will require digital skills.

NHSX

The government has established a new joint policy unit, NHSX, to bring together expertise in digital technology, data and cyber security and accelerate digital development. NHSX will help to deliver the vision for technology in the Long-Term Plan.

Doncaster Royal Infirmary

Montagu Hospital

Bassetlaw Hospital

Regional context

Working with our regional partners

The Trust already has good working relationships with our local partners and our Digital Strategy is wholly consistent with the 'South Yorkshire and Bassetlaw ICS Digital Transformation Strategy'. Only by working together will we move to a highly interoperable, care system wide approach to technology solutions and away from disparate silo-based implementations.

South Yorkshire and Bassetlaw Integrated Care System

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The SYB ICS Digital Vision:

❝ Using **data and digital transformation** for the benefit of all SYB citizens and staff, to improve health and wellbeing, reduce health inequalities and deliver excellent services. ❞

The SYB Digital Transformation Strategy is focused on four key outcomes and several supporting capabilities:

Digital Citizens

Empower citizens with the digital tools and skills to manage their health and care effectively.

Data Intelligence

Provide data and intelligence to give insight into and address the health inequalities of the SYB population

Workforce

Provide the digital tools and skillsets for staff to work safely and effectively, building a resilient and agile workforce.

Integrated Care

Digitally transform services and improve data sharing to better integrate care, improve efficiencies and enhance people's care.
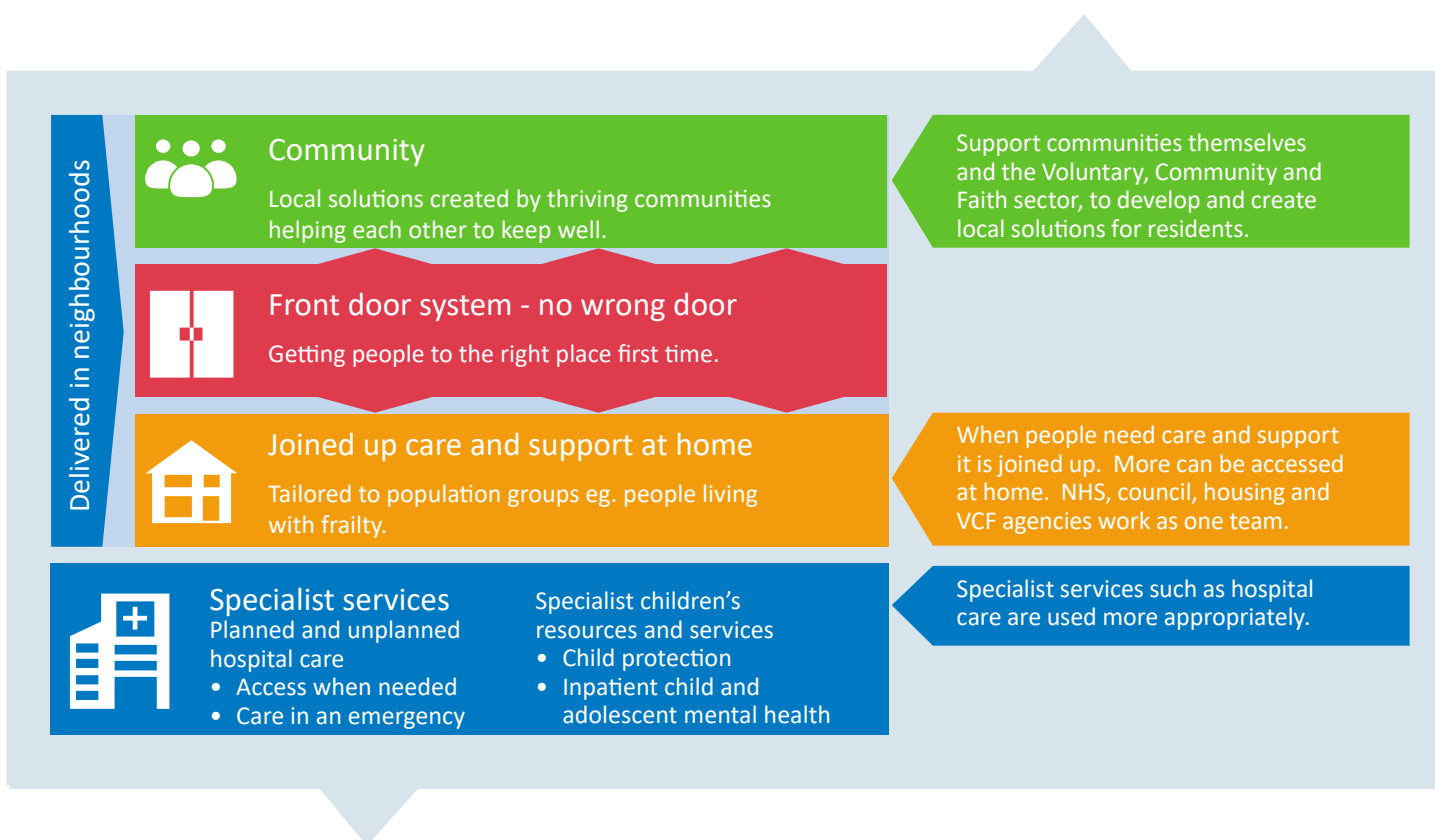
Making the very best use of technology to provide the very best care.

Local context

Doncaster Place Plan

The Doncaster Place Plan is the document which sets out the vision for the Doncaster Integrated Care Partnership (ICP). It outlines a four-layer model which recognises that improving the health and wellbeing of the local population will not be achieved by strengthening hospital care and general practice in isolation or that schools or social care can address challenges to children and families alone. The Place plan puts a strong emphasis on planning, commissioning and delivering across four layers:

Community
Local solutions created by thriving communities helping each other to keep well.

Support communities themselves and the Voluntary, Community and Faith sector, to develop and create local solutions for residents.

Front door system - no wrong door
Getting people to the right place first time.

Joined up care and support at home
Tailored to population groups eg. people living with frailty.

When people need care and support it is joined up. More can be accessed at home. NHS, council, housing and VCF agencies work as one team.

Specialist services
Planned and unplanned hospital care
- Access when needed
- Care in an emergency

Specialist children's resources and services
- Child protection
- Inpatient child and adolescent mental health

Specialist services such as hospital care are used more appropriately.

Delivered in neighbourhoods

Bassetlaw Place Plan

The Better in Bassetlaw Place Plan is the document which sets out the vision for the Bassetlaw Integrated Care Partnership (ICP).

Underpinned by a Memorandum of Understanding, the ambition for the Bassetlaw ICP is to deliver improvement in experiences, health and wellbeing for Bassetlaw citizens, through simpler, integrated, responsive and well understood services which ensure people get the right support at the right time.

Setting the scene
our digital journey

A mixed picture

The Trust has always invested in digital technology. However, the extent to which the desired outcomes have been fully achieved is mixed. Most of the initiatives have been successful however, several have stalled, others have been partially implemented. There are many reasons why this is the case including high levels of variation in business processes, complex clinical pathways and in a few cases a lack of engagement. Going forward we will ensure that our digital initiatives have a high level of delivery confidence, follow best practice in terms of business change and, with senior levels of accountability throughout.

Digital maturity assessment

The Digital Maturity Assessment provides a framework for assessing care and the extent to which healthcare services in England are supported by the effective use of digital technology. In the first iteration of the Digital Maturity Self-Assessment return in April 2016, the Trust's overall scores were consistent with the national average across secondary care providers. Going forward, the Trust will be adopting the HIMSS Electronic Medical Record Adoption Model (EMRAM), which incorporates methodology and algorithms to automatically score hospitals digital maturity around the world relative to their EMR capabilities.

Key initiatives

Since the previous Digital Strategy, we published 2017, good progress has been made in terms of promoting digital ways of working at the Trust including:

- Deploying a Clinical Portal which provides real-time access to some 40 clinical systems through a single application.

- Deploying bed management, hospital@ (night time escalations), eObservations/Sepsis/fluid balance, and 'Axe the fax' as part of the Digital Transformation Programme. These are all key components of introducing an EPR.

- Introducing a patient communications solution called DrDoctor to provide a text reminder service which significantly reduced the number of missed appointments, referred to as 'did not attends'.
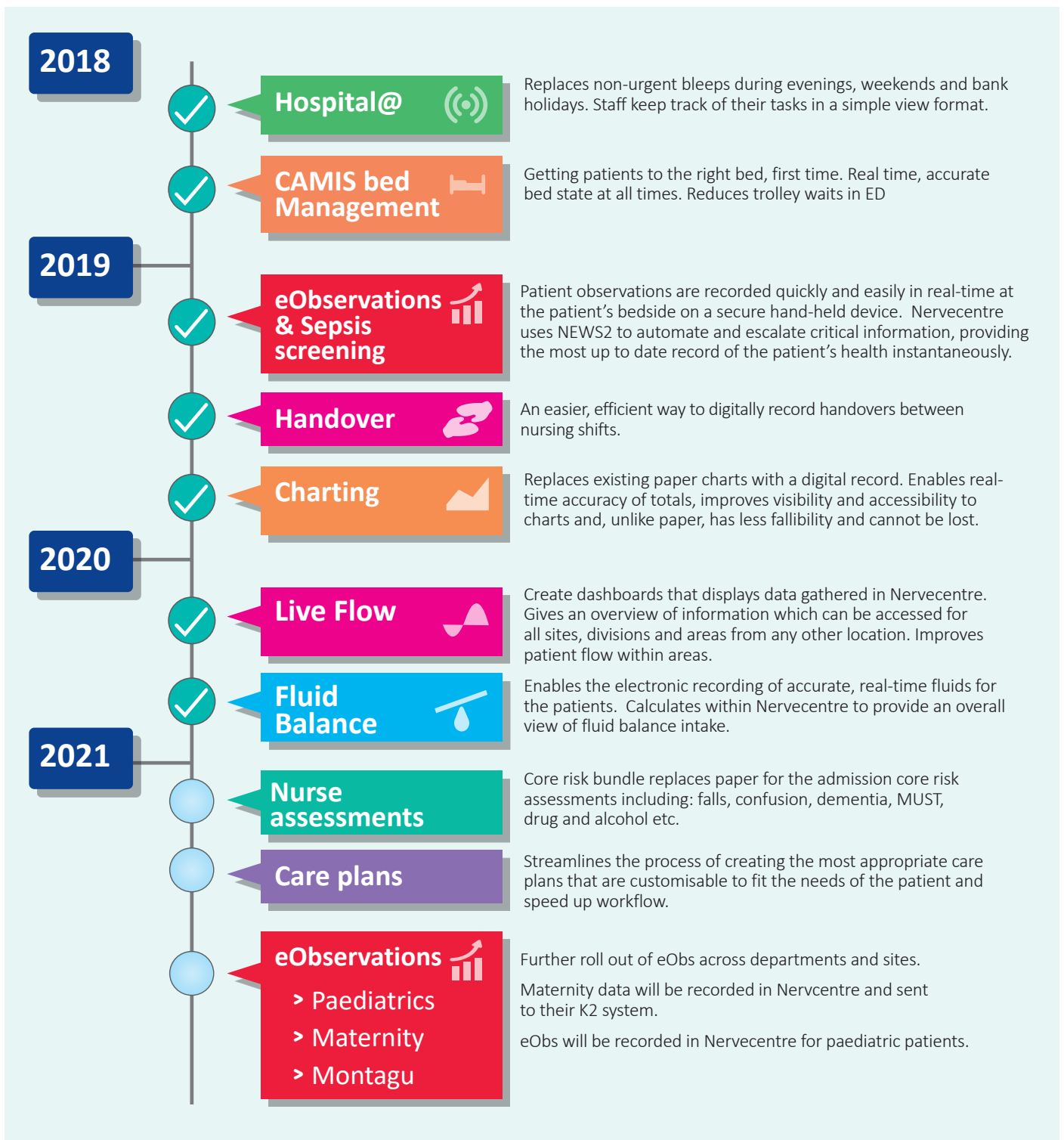
Our digital journey
Since 2017

Key challenges

- Build digital capacity and capability
- Recruitment issues
- Structure
- Business intelligence

- Silos of information pulling this into the portal
- Systems out-of-support and out-of-date
- Financial and contract management
- Cyber security and information governance.

2018

Hospital@ — Replaces non-urgent bleeps during evenings, weekends and bank holidays. Staff keep track of their tasks in a simple view format.

CAMIS bed Management — Getting patients to the right bed, first time. Real time, accurate bed state at all times. Reduces trolley waits in ED

2019

eObservations & Sepsis screening — Patient observations are recorded quickly and easily in real-time at the patient's bedside on a secure hand-held device. Nervecentre uses NEWS2 to automate and escalate critical information, providing the most up to date record of the patient's health instantaneously.

Handover — An easier, efficient way to digitally record handovers between nursing shifts.

Charting — Replaces existing paper charts with a digital record. Enables real-time accuracy of totals, improves visibility and accessibility to charts and, unlike paper, has less fallibility and cannot be lost.

2020

Live Flow — Create dashboards that displays data gathered in Nervecentre. Gives an overview of information which can be accessed for all sites, divisions and areas from any other location. Improves patient flow within areas.

Fluid Balance — Enables the electronic recording of accurate, real-time fluids for the patients. Calculates within Nervecentre to provide an overall view of fluid balance intake.

2021

Nurse assessments — Core risk bundle replaces paper for the admission core risk assessments including: falls, confusion, dementia, MUST, drug and alcohol etc.

Care plans — Streamlines the process of creating the most appropriate care plans that are customisable to fit the needs of the patient and speed up workflow.

eObservations
> Paediatrics
> Maternity
> Montagu

Further roll out of eObs across departments and sites.

Maternity data will be recorded in Nervcentre and sent to their K2 system.

eObs will be recorded in Nervecentre for paediatric patients.

Our Digital Vision

Our vision for digital is ambitious and wholly aligned to the Trust's strategic objective of becoming the 'Safest trust in England'.

We will deliver digitally enabled services which provide exceptional care, quality and safety for our patients, a single view of information for our clinicians, with collaboration at our core.

Digitise patient interactions

Our patients will be able to interact and provide updates to our teams in ways more efficient than existing physical appointment process. Through a single patient portal, they will able to see when their next appointment is due (helping to reduce the likelihood of missed appointments), access results and information related to their own healthcare needs.

Improved user experience

We will do this by using fewer systems and adopting more streamlined access methods whilst retaining high levels of security.

Deliver enabling technology

We will implement systems that improve technology that supports our teams' ability to support patient care rather than be viewed as an administrative barrier.

Provide relevant tools for the role

We will implement digital technology that allows cares to remain at the patient's side when updating or viewing information with devices which are relevant to the environments in which they are operating. Tools such as tablet computers, smart phones, and wearable devices will all have a place in our new digitally connected ways of working.

Accurate and timely data at the point of care

This will improve the speed at which analysis can be made and improve the accuracy of decisions. The data we acquire throughout our daily activity will be proactively placed back into the hands of our clinicians, managers, leaders and decision-makers through compelling self-serve reports and dashboards.

Fully digitised end to end process

This will have massive administrative and clinical benefits by removing the need to manually collate and process paper charts across every bed, instead activity can be easily prioritised based upon recorded observational feedback. Digitising core activities, such as observations, will lead to improved patient care, safety and reduced costs. Safety will be further improved as the reliance on interpreting handwritten notes will be removed with the introduction of clinical noting.

Data sharing and interoperability

At an organisational level, the success of our strategy will be proven when digital is regarded by our patients, staff and health economy partners as a key enhancement to every clinical pathway and is embedded as a way of working.
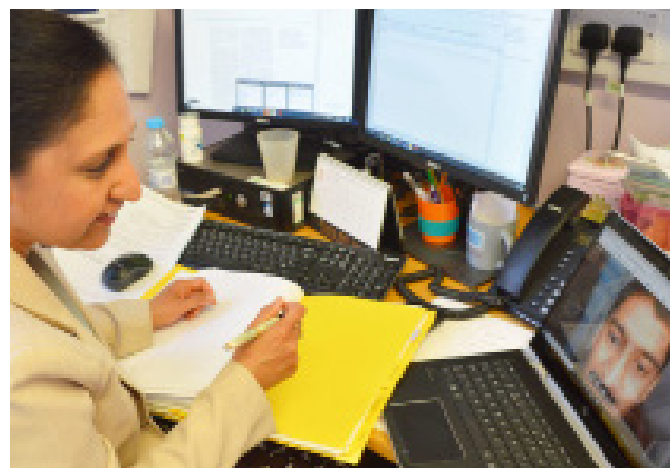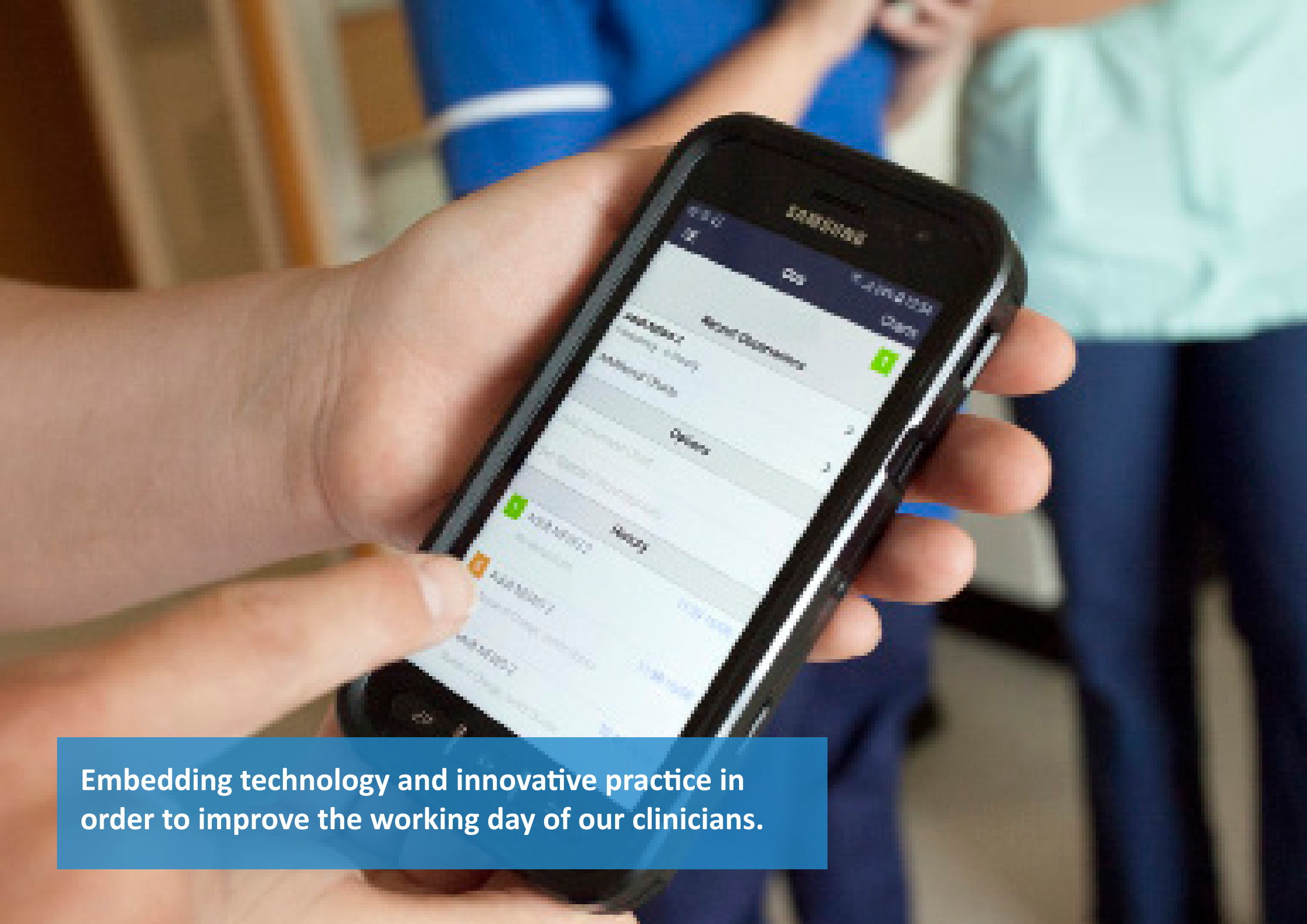
Embedding technology and innovative practice in order to improve the working day of our clinicians.

✓ Our Patients

Our ambition is to create the best possible care and experience for patients, meeting their needs and providing seamless care wherever they are in the Trust and in the healthcare system.

Patient roadmap

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

We will develop a roadmap for patient centred digital channels and services, including access to personalised advice on staying well, access to their own data, and triage to appropriate health and care services.

Patient portal

All patients will be able to access their healthcare records, to enable them to be active partners in their own care. This will be enabled through:

- A patient portal which allows patients to view and manage their own appointments and access their test results, letters and key record information;

- Providing a choice about how to receive appointment reminders (e.g. text or email)

- The ability to provide clinical data to their clinician (e.g. blood sugar levels to a diabetic specialist)

This is about providing a patient centric experience built around an individual's needs.

Ideally the portal will be based on a common digital platform to provide a consistently improved experience for those patients who may be seen and treated across different locations.

Patient wayfinding

When patients attend the hospital their levels of anxiety will be reduced by the introduction of way finding information systems that guide them to their destination. This will include the provision of short video clips of their route which they can view in advance of their appointment. When patients reach the hospital, they will be guided by updated physical signage and a smartphone application that provides step by step navigation from parking areas, through the hospital to the appropriate clinical area.

Scaling up virtual consultations

Virtual consultations have been successfully implemented by several specialties during the Covid pandemic. We will seek to scale up the number of consultations by video rather than face to face with the aim of providing a convenient service to those patients who do not need to physically come into the Trust and attend an appointment. This initiative will help to reduce non-attendance rates leading to improvements in patient outcomes.

Telehealth

We roll-out remote monitoring to allow patients to manage long-term conditions within the comfort and safety of their own homes (including care homes) using wearable devices. This will enable patients to stay at home for longer, using a range of tools to help them manage their digitally enabled care at home. For example, the ability to track a patient's mobility or to monitor cardiology performance metrics 24/7.

Sharing patient information

We aim to provide patients with a seamless user experience where those caring for them can easily access comprehensive, accurate and timely information (e.g. diagnostic tests, clinical notes, case history). Patients will no longer to repeat their details as they move from one care service to another - data will shared wherever it can and should be. Patients will also benefit from a reduction in diagnostic lead-times and the elimination of duplicate tests. For example, if a patient has a blood test or medical image in Doncaster, the results will be readily available to other Trusts across the Integrated Care System (ICS) (e.g. in Sheffield, Rotherham and Barnsley). To this end, we will work with our IMS colleagues to set out the case for the procurement of a single Laboratory Information Management system (LIMS) across South Yorkshire and Bassetlaw.

Web Apps

New digital apps and tools are empowering patients to take care of their health, well-being and care. We will actively promote the use of apps to patients (e.g. to manage stress and anxiety) and where feasible integrate them with the Trust's systems.

Information related to apps will be readily available via the Trust's patient portal which will effectively provide patients with a one-shop-stop access to a rich source of information to help them, and their careers, take care of their own healthcare needs.

Accessibility and inclusion

Our services are for everyone, including people with different physical, mental health, social, cultural or learning needs. In taking forward our digital agenda, we will consider the needs of a diverse set of users. The introduction of innovative technologies and services will consider the digital literacy of our local communities and all patient cohorts to ensure they are accessible. Providing accessible information will help to improve access to services, promote social inclusion and enable people to make more informed choices about their care.

Community Diagnostic Hubs

Community Diagnostic Hubs will provide patients with a coordinated set of diagnostic tests in the community, in as few visits as possible, enabling an accurate and fast diagnosis & provide additional diagnostic provision in England from 2021/22. By investing in digital solutions and equipment we will seek to reduce pressure on acute sites and long-term improvement in waiting time performance for acute and community diagnostic services.

✓ Our Workforce

Developing an appropriate level of digital capability that will enable colleagues to work more efficiently through the innovative use of technology.

Digital is everyone's responsibility

The adoption of new digital technologies and ways of working is no longer the preserve of 'the IT Department'. If we are to leverage the benefits of digital transformation, there will need to be a paradigm shift in terms of working practices, processes and procedures throughout the Trust.

Workforce engagement

We will continue to increase the number of clinical and non-clinical staff who are directly engaged in digital transformation. Each division will be responsible for appointing two 'digital champions' who will act as a key point of contact. They will work closely with Quality Improvement and digital colleagues to produce a 'Digital Plan' that will be incorporated into their Divisional Corporate Plan. These strategic roles will help provide to provide guidance and technical expertise to ensure the right solutions are in place for their Division. Progress will be monitored and reported via existing governance arrangements (e.g. Divisional Accountability Meetings) and communications channels.

Executive Team engagement

Each member of the Executive Management Team will take the SRO lead for the delivery of a key digital initiative which is directly related to their existing portfolio. In many respects, this is about senior managers leading by example, but just as importantly, it is about signalling the demonstrable change in culture that is required to deliver a digitally enabled workforce.

Staff training in digital

The Topol Review 2019 estimated that within 20 years, 90% of all jobs in the NHS will require some element of digital skills. We will build the digital and data literacy of the whole workforce.

To increase digital confidence, we need to ensure that we are recruiting for the right skills, giving new staff appropriate induction and supporting skilled staff with the right training to develop others. We will ensure the Trust takes advantage of the NHS Digital Academy and supports the formal development of its clinical and digital leadership by ensuring regular enrolments.

Skills to manage business change

Digital transformation is wholly dependent on an organisation's ability to proficiently manage business change. Through our digital champions and training interventions, we will seek to build capability in those skills which directly support business change (e.g. communications, stakeholder engagement, business analysis).

Adopting flexible and remote working

The speed at which the Trust's workforce has implemented innovation (e.g. video-conferencing) and remote working since the outbreak of COVID-19 has been impressive and encouraging. The opportunities these changes have brought in terms of better work-life balance are self-evident and positive for the majority of our team members. Going forward, we must ensure these new working arrangements are equitable and can promote highly collaborative ways of working for individuals and the wider trust.

Nurse quality audits

We will introduce routine quality audits via easy-to-use apps, which will use digital technology to simplify nursing audits that review the quality of the care patient receive.

Faster operational decision making

By applying the latest digital innovation and proven best practices, operational data will help staff to make faster and informed decisions, optimise patient flow and allow real-time co-ordination of care.

Our System Leadership

Our ambition is to work with our SYB ICS colleagues and other partners to use data and digital transformation to improve health and wellbeing, reduce health inequalities and deliver safe healthcare services

Yorkshire and Humber Care Record

In phase three of the NHS response to COVID-19, NHS England mandated that shared care records must be implemented by every ICS by September 2021. A broad definition of the content of a shared care record has been produced by the Professional Records Standards Board (PRSB). SYB ICS proposed that Doncaster & Bassetlaw Teaching Hospitals NHS Foundation Trust (DBTH) might act as an exemplar and demonstrate that enriching the data available from a data provider is a practical proposition which can be repeated across the ICS at scale. DBTH already share patient encounter data (due to the recently completed Yorkshire Humber Care Record project) and have the appetite, knowledge and experience to undertake this project.

The outcomes of this project are:

• Enabling clinical and care staff outside of Doncaster to access real-time health and care information across health and social care providers and between different IT systems, securely and safely.

• Enabling improved population health management, moving away from isolated episodic care to a holistic approach, providing health

and social care professionals with a single point of access to information about a service user, collected from their separate medical and care records.

• Detailed plan for implementing electronic transfer of care from the ambulance service.

Population health and business intelligence data

Business intelligence data will transform information consumption within the Trust and will support robust data analysis across the ICS. The ability to link health care datasets will extend our analytical capability and insights. This will include impact modelling and design of interventions to improve care and support population health management strategies. For example, the ability to deliver target service improvements by being able to identify those patients who are 'at risk' and their needs.

Standardise digital pathways

We will seek to remove the digital friction between our Trust and other providers by implementing seamless joined-up technology ecosystem that allows information to flow freely and securely. By ensuring our information is available across the region we can improve the flow of patients into and out of hospital.

ICS engagement and support

Digital and Informatics colleagues at DBTH are committed to delivering system wide initiatives and wider change. There are clear benefits for the Trust and the health care system, particularly in relation to delivering system interoperability and access to data for analysis and planning. It is therefore essential that we help to shape the ICS Digital Transformation Strategy going forward.

Reducing our reliance on paper and moving to digital solutions for the benefit of our patients.

Our Data Analytics

Our ambition is to revolutionise data and information consumption across the Trust. Data-driven health and care processes, procedures and technologies will deliver significant benefits to patients, clinicians and carers

Business intelligence

Our focus on business intelligence will help the Trust make better decisions by showing present and historical data within its operational context. It will:

- Offer performance benchmarks to make the Trust run smoother and more efficiently.
- Help to identify trends in performance and activity numbers to predict and plan for patient pathways of care.
- Be used to manage resourcing and finances.

Just about any aspect of the running of the Trust can be improved through robust business intelligence.

Data warehousing

Business intelligence will be enabled by making use of the latest technology and offering a data warehouse and a self-service portal for business users. This will provide the Trust with improved tools and mechanisms that enable data-led insights and better decision making. The development of the data warehouse will be taken forward in four stages:

- Centralise the data from all the Trusts functions.
- Develop the analytical tools.
- Develop a portal and interfaces for end user reporting via Power BI.
- Provide training in new analytical tools and technology.

Self-service analysis

We will introduce tools which will enable clinicians and operations managers to independently access, review and monitor and extract data for analysis and reporting. These tools will help colleagues to maintain and manage the information they need when they need it.

Predictive modelling

The recent investment in data warehousing technology will facilitate the shift from a reactive response to historical data to proactive management using data mining and modelling tools to generate predicative data analysis.

Live patient flow data

Following the introduction of the Trust's Electronic Patient Record we will improve patient flow by presenting real-time information in a meaningful manner to all key stakeholders from arrival at ED through discharge. This will enable us to automate standard clinical pathways and reduce delays through electronic referrals and tasks and ensure the appropriate signposting a resource for high risk patients through automated risk assessments on admission. Over time, it is anticipated that we will interface with CQC so that they can consume our real-time data.

Real-time operational dashboards

Interactive 'at a glance' screens were introduced in each ward are in conjunction with the implementation of bed management e-observations. The screens provide risk scores for patients are easily accessible to ensure that appropriate treatment is given in a timely manner. The next step is to provide trust level operational dashboard displays which harness clinical and operational data in real-time to ensure important decisions about patient care are based on accurate data across multiple patient pathways. This will help to identify potential bottlenecks and minimise delays in discharge and transfers of care.

Clinical coding

The Trust has a reputation for high quality clinically coded data, which is achieved by providing high quality training, mentoring and support for all team members. Clinical coding is the process whereby information written in patient notes is translated into standardised codes (using ICD-10 and OPCS-4 classifications) and entered onto the Patient Administration System. The Trust is committed to collecting and processing data according to nationally and locally defined standards. Standards are essential to ensure data collection is consistent throughout the Trust; is accurate and up to date; and data outputs can be compared across the organisation and with other organisations.

The Trust will adopt SNOMED CT which is a nationally mandated structural clinical vocabulary for use in electronic health records. The benefits of using SNOMED CT in electronic care records include vital information can be shared consistently within and across health and care settings; clinical decision making is supported, and it facilitates analysis to support more extensive clinical audit and research. The Trust will continue to review the quality of its data by using audit reviews and national benchmarking tools.

Our Technology Systems

Our ambition is to provide a fully electronic patient record that is fully integrated with a suite of clinical systems to ensure patient information is available anywhere, anytime to facilitate safe patient care

eObservations / SEPSIS

Observation frequency is automatically set based upon previous observations, with notifications and escalations configurable for due and overdue observations, and ward-based compliance reporting. Nurses can escalate to doctors without leaving the patient's bedside, and the system will cascade intelligently to ensure the quickest and most appropriate response, day or night. Early Warning Scores and pathology results for early diagnosis of sepsis ensures that the appropriate doctors and nurses are immediately alerted when a risk of sepsis has been identified.

Assessments and Care Plans

Assessments have specific outcome or target where there is a need for an action or actions based upon the questions answered and the result calculated i.e. MUST or waterlow. They also relate to activities that require regular repetition so we can monitor the compliance.

Case notes are a whole patient record from clerking to ward rounds, continuation sheets and nursing evaluations etc. They comprised of multiple configurable forms which allow snapshot moments in time to be recorded with a high level of agility e.g. handover or data reporting

Digital Critical Care

We will introduce a new clinical information system in Critical Care which will draw information from bedside patient monitoring equipment, infusion pumps, dialysis machines, ventilators and other clinical devices. It will use this data to display and record continuous observations, releasing more time for nursing and clinical care. A single view of clinical information will allows workflow to be standardised and more efficient leading to safer patient care. It will also incorporate an electronic and prescribing medicines (EPMA) system which will eliminate existing paper based administrative systems.

PAS & ED

Within the timeframe of this strategy we will review the current arrangements for our patient administration system (PAS) and urgent and emergency clinical software to provide real-time data on out-patients / waiting lists and to ensure clinicians in the Emergency Department are seamlessly provided with the information they need at the point of care.

Electronic Prescribing & Medicines Management (EPMA)

Medication is a fundamental element of patient care from admission through to discharge and transferred for continuation of care in the community. Administration frequency for all medications is set, providing medication due notifications and links to British National Formulary (BNF) provides increased patient safety through up to date drug guidance. The ability to perform these tasks at the patient bedside increases efficiencies and visibility to clinicians. Configurable forms enhance clinical decision support and ensure safe prescribing procedures are in place.

Theatre Management System

Scheduling patient procedures efficiently enables effective and efficient resource allocation and utilisation. Configurable paperless assessments provide seamless flows through theatre and the ability to document utilising mobile devices increase productivity and visibility of patient clinical data at the point of care.

DBTH Clinical Portal version 2

The DBTH Clinical Portal was launched in 2020 following an extensive trial of a prototype. It provides a dashboard for forty plus data sources which can be accessed in one secure and easy to use place to help with ward rounds and clinical care throughout the Trust. The development of a new version with even greater functionality and the ability to integrate a wider range of data sources is planned for early 2022

Robotic Process Automation (RPA)

RPA involves software tools that will partly or wholly eliminate repetitive transactional processes. In healthcare settings, this primarily relates to the extraction and analysis of patient data and appointment scheduling. We will seek to introduce RPA processes from late 2021 with the aim of leaving staff free to spend time on more clinically focussed activities.

Artificial Intelligence Systems

Artificial Intelligence Systems (AIS) is already widely used across the NHS. It is used in areas like diagnostics, using data-driven tools to complement the expert judgement of front-line staff. While the opportunities of ASI are significant, so too are the challenges. Over the next two years we will seek to trial and introduce AIS tools and systems for day to day tasks across the Trust including, diagnostics, knowledge generation, public health and system efficiency.

Regional Pathology and Radiology Systems

In response to the Carter review and NHSI pathology consolidation agenda, South Yorkshire and Bassetlaw have agreed to take forward a single unified Laboratory Information Management System (LIMS) across the Integrated Care System (ICS) in 2021/22.

Risk Management (Datix upgrade)

Risk management is vital for the organisation to capture, monitor and report risks associated to the business. The ability to integrate with Trust systems such as PAS, will alleviate ambiguity and increase accuracy in data entry. Increased functionality and workflow will enable better management of reportable incidents i.e. RIDDOR.

Microsoft Office 365

Following a pilot exercise, we will incrementally deploy Microsoft Office across the Trust. We have already seen the benefit of Microsoft teams for videoconferencing in recent months. New and improved on-line tools will help to drive greater collaboration between teams and increase individual's productivity.

Our Technology
Infrastructure

Our ambition is to provide a reliable, secure and high-performing IT infrastructure that is vital for efficient operations which underpin the Trust's Digital Transformation agenda.

In order to deliver the ambitions of the digital strategy, the Trust needs to invest in the necessary infrastructure in order to provide a stable foundation for our future aspirations. This work is of crucial importance to the ongoing sustainability and security of digital services and the principle enabler for our long-term strategic aims.

It is also the work that is least visible to our patients and staff but essential for supporting our business as usual activities.

Furthermore, access to reliable, responsive and resilient IT infrastructure is essential to the Trust's safe and efficient operations. Existing systems; new digital projects and other clinical and business-led initiatives will be less successful or risk failure if the underpinning IT infrastructure is not robust.

The Trust's IT infrastructure is made of hardware and software systems. Some systems are reasonably recent with strong supplier support available; others are more than a decade old and are operating without supplier support and maintenance.

The underpinning themes of the strategy are to provide and maintain equipment and software which is:

- Securely configured; well maintained; and up to date with features and fixes.
- Subject to strict lifecycle management practices, to prevent unmanaged obsolescence
- Of a good quality in respect of availability and performance delivered to end users.

There are several must-do infrastructure investments, alongside activity to prepare for the future including:

- Desktop Equipment and laptop devices
- Mobile devices
- Networks
- Telephony
- Servers and storage
- Microsoft 365

Brilliant basics

We will lead with a philosophy of 'brilliant basics' to ensure our IT infrastructure is proactively enhanced and updated to the levels needed to support sustainable, scalable and performant access to the IT systems needed to safely and efficiently run the Trusts clinical services and other business functions.

This includes replacement programmes to introduce and maintain a suitable blend of:

- Desktop PCs and laptops
- Mobile devices
- Computers on wheels.

Desktop equipment and laptop devices

As part of recent work to upgrade all desktop PCs and laptops to Windows 10, the very oldest and lowest performing equipment has been upgraded or replaced to a minimum standard capable of running Windows 10 and the main clinical applications currently used by the Trust.

In order to achieve the goal of reliable, responsive and resilient infrastructure, an annual investment in desktop systems will be needed. The aim is to ensure all users have access to equipment that will 'boot' to a login prompt in approximately 20 seconds and deliver a fully operational Windows desktop in approximately 1 minute. This will be delivered through a combination of a rolling PC replacement program and extending the Desktop Infrastructure (VDI) solution based upon Hyper-converged Infrastructure (HCI).

Mobile devices

The Trust uses a significant number of mobile devices in the form of smartphone and tablets from Apple, Samsung and other manufacturers. The devices have a useful life of approximately 5 years. Beyond 5 years, battery reliability and lack of support and security updates from manufacturers means the device presents a risk if use is sustained. In order to maintain mobile devices, a rolling replacement program will be necessary.

Network Resilience

This will be supported by effective, resilient, and well-maintained IT network facilities and excellent operational IT support services, operating 24 hours a day, seven days a week throughout the year and delivered by a well-trained and resourced staff base and automated support and monitoring facilities.

Our Digital Transformation journey should run in tandem with our vision to be the safest Trust in England, outstanding in all that we do.

Over the course of this strategy, the Trust's wired and wireless networks, telephony and server resources will be updated or replaced as necessary to establish and maintain secure and well performing platforms for the delivery of IT systems and reliable telecommunication services. This will include:

- Secure and efficient 'single sign-on' to computers and systems.

- Roaming logon sessions that follow clinical staff around their locations of work.

- A self-service option to securely reset passwords without IT staff intervention.

Cloud First

As part of the improvement of network facilities, we will adopt a 'hybrid cloud' approach to deliver services through the most effective combination of local 'on premises' facilities and 'cloud' hosted solutions. This will also support the Trust in operating resilient services from multiple locations and simplify the issues that a future move to a new hospital build will generate. This will consist of:

- Enhanced Internet links to maintain and improve performance and reliability levels as more facilities are delivered from remote locations.

- Access to innovative technology options that can scale system performance and storage according to the changing needs of the organisation at different times of the day, week, month and year.

- An infinitely scalable architecture with assurance that key infrastructure facilities can evolve and expand or contract according to the developing needs of the Trust.

Bring Your Own Device (BYOD)

Bring your own device is a service offered by organisations to their employees to enable them to use their own devices for work, e.g. mobile phones, laptops and tablets. Enabling staff to use their own device for work can bring benefits, but there are significant risks as they are not as secure or easy to support as Trust devices. For example, to ensure the device is protected against unlawful access, for example if the device is lost or stolen. The Trust is responsible as the data controller. We will develop a BYOD policy which ensures that risks are managed and appropriate controls are implemented.

Collaboration across the ICS

We will work with other Trusts across the ICS to standardise the architectural design of IT infrastructure to industry best practice, as well as aligning software, hardware and platform solutions, hardware and platform solutions to deliver cost efficiency, safety, privacy, efficiency and interoperability.

Adoption of ITIL for IT Service Management

ITIL provides a flexible best practice framework for managing IT services around the entire service lifecycle including: organisations and people, information technology, partners and suppliers, value streams and processes. Its aim is to fully adopt the ITIL framework by 2023 within the Trust.

Our Security
Cyber Security & Information Governance

Cyber security

The Trust is committed to providing high quality, safe and performant healthcare services. The growing pace and frequency of cyber-attacks on healthcare and public-sector organisations internationally means that cyber security must be a priority area for the Trust, both now and for the foreseeable future.

The Digital Transformation Directorate works to continuously evaluate and strengthen the Trust's cyber-resilience against a threat environment that is always changing and evolving. This is achieved through a combination of local expertise and collaboration with partners and national bodies, and with oversight from NHS Digital through the Data Security and Protection Toolkit (DSPT).

The five principle cyber-security goals of the Digital Transformation Directorate are:

- Provide and maintain secure and performant systems to support the Trust's operations.
- Strengthen the Trust's capabilities to defend against and recover from cyber attack.
- Collaborate with key local partners and NHS Digital nationally to improve cyber-resilience.
- To continually inform and educate staff about cyber-awareness and the required standards.
- To take a risk-based approach to the prioritisation of cyber-security work and investments.

Information governance

- To develop policies, guidance and action plans to meet National and Local Data Security & Protection (Information Governance) requirements.
- To performance manage action plans and assure the Trust Board, through the ARC, that there are effective processes in place for data security and protection (Information Governance) compliance.
- To action and monitor any breaches of IT security or confidentiality, and to report same through DATIX WEB and/or the DSP Toolkit SIRI reporting tool as necessary, and to learn from these.
- To act in an advisory capacity to clinicians and management on matters relating to information governance and data security.
- To review and approve all Data Quality Policies and Terms of Reference.
- To manage the Data Security & Protection Toolkit (DSPT) work plans/objectives commensurate with the published IGAF, to assure the Trust Board through ARC, that there are effective processes in place for data security and protection (Information Governance) compliance.
- To ensure action on any breaches of IT security or confidentiality, and to ensure reporting of same through DATIX WEB and/or the IG Toolkit SIRI reporting tool, and to learn from these incidents.

✓ Delivering the digital strategy

Design principles

Simpler: We will rationalise the number of systems in use we will not replicate complex processes digitally.

Connected: We will create tools and systems that bring together information from disparate systems we will not create closed systems which create silos of information.

Faster: We will develop digital solutions that streamline work for clinicians, improving their speed and efficiency, whilst enhancing the patient experience. We will not develop inefficient solutions that detract from the patient experience.

Enabling: We will create digital solutions to transform care pathways. We will not create solutions in isolation, and we will learn from others to accelerate implementation.

Secure: We will develop digital solutions that are safe and secure and meet our security standards. We will not support any solutions that put patient data at risk.

Mobile: We will develop and procure applications and systems that can be seamlessly used across a range of devices and or platforms that provide users with the ability to access the information they need at the point of care, wherever that may be .

Governance

Until recently, decisions related to digital investments were frequently taken in a somewhat fragmented manner across the Trust. The new governance structure which was approved by the Trust's Finance and Performance Committee in October 2020 aims to provide a sound foundation for prioritising the Trusts digital initiatives.

Prioritisation is supported by the adoption of weighted categories which ensure we are focused on those initiatives which will significant help the Trust achieve its strategic objectives. These categories include:

Risk: level of corporate and clinical risk of not implementing.

Benefit/return on investment: level of corporate and clinical benefit delivered against investment.
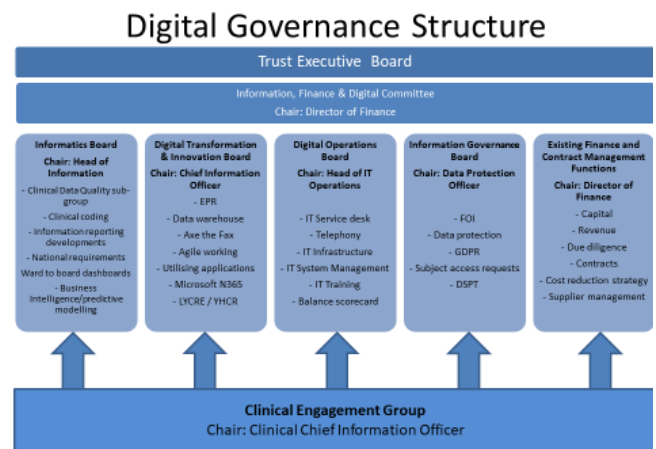
Availability of funding: for implementation and support.

Resource consumption: necessary for implementation.

Political expediency: meeting local and national directives; and

Proximity: related to the requirement to phase related initiatives.

The new structure (outlined in the diagram below) aligns all aspects of informatics, transformation and innovation, IT operations, and information governance.

Digital Governance Structure

Trust Executive Board

Information, Finance & Digital Committee
Chair: Director of Finance

| Informatics Board
Chair: Head of Information | Digital Transformation & Innovation Board
Chair: Chief Information Officer | Digital Operations Board
Chair: Head of IT Operations | Information Governance Board
Chair: Data Protection Officer | Existing Finance and Contract Management Functions
Chair: Director of Finance |
|---|---|---|---|---|
| - Clinical Data Quality sub-group
- Clinical coding
- Information reporting developments
- National requirements
Ward to board dashboards
- Business Intelligence/predictive modelling | - EPR
- Data warehouse
- Axe the Fax
- Agile working
- Utilising applications
- Microsoft N365
- LYCRE / YHCR | - IT Service desk
- Telephony
- IT Infrastructure
- IT System Management
- IT Training
- Balance scorecard | - FOI
- Data protection
- GDPR
- Subject access requests
- DSPT | - Capital
- Revenue
- Due diligence
- Contracts
- Cost reduction strategy
- Supplier management |

Clinical Engagement Group
Chair: Clinical Chief Information Officer

Communications

This Digital strategy has been developed in consultation with various stakeholder communities within the Trust and with external bodies including the Doncaster and Bassetlaw CCGs. NHS Digital have also been consulted to ensure the strategy reflects current thinking with reference to centralised technologies and emerging national digital guidelines. Progress against the strategy will be periodically presented to the Board of Directors and Governors. This strategy will be disseminated throughout the organisation via a range of channels including the extranet, social media and local staff presentations.

Standards and digital maturity

Raising our ambitions

As an organisation we must accelerate and raise our ambitions to create a digitally mature Trust that exceeds the expectations of both our staff and patients.

Technology standards

We will play an active role in promoting the use of Digital Standards as they are central to our ambition to increase integration and improve the quality of health and care. The use of standards in the delivery of digital, data and technology are critical to ensure products are safe, effective and meet users needs. We will leverage the work already taken by NHSX and NHS Digital to promote international standards implementation wherever possible and adopt the principles outlined in their framework: The NHS digital, data and technology standards. The framework outlines ten standards for clinical safety, the use of data, interoperability and design interactions (see below).

Digital maturity and benchmarking

Digital maturity is the extent to which organisations have successfully adopted digital technology to transform and delivery high-quality health care services. Various frameworks and models are used nationally and internationally to identify strengths and gaps and benchmark their progress over time or against other healthcare providers. The most widely recognised standard is Healthcare Information and management System Society (HIMSS) framework. We will use this framework to help inform our investment decisions with the view to promoting best practice in the adoption of digital.

The NHS digital, data and technology standards:

- Patient records for all health and care settings must use the NHS number wherever possible.

- Logging into NHS systems should be through an approved authentication system.

- Patient information held in electronic health records should comply with NHS clinical information standards.

- NHS Reference Data Registers are the reference data source of choice in NHS systems.

- All software and health IT systems must be designed, developed and operated safely to conform with clinical safety standards.

- All NHS digital and technology services should achieve the Data security Standards required through the data security and protection Toolkit (DSPT).

- All NHS digital and technology services should support FHIR-based APIs to enable the seamless care across organisational boundaries.

- All NHS digital, data and technology services should be designed to meet users needs in line with the principles of the Digital Service Standard and technology Code of Practice.

- NHS services should be operated with enabling infrastructure that supports technical evolution, financial investment and resilience.

- NHS Digital, data and technology services

DBTH Digital
Transformation
programme

NHS

**Doncaster and Bassetlaw
Teaching Hospitals**
NHS Foundation Trust