

AMBITIOUS
DIVERSE
RESILIENT
SUSTAINABLE



Digital Data Intelligence and Insight

At Bradford Teaching Hospitals NHS Trust (BTHFT) we are proud of the excellent care we provide to our patients. We have some of the best staff across the country working right here, in Bradford, providing high-quality services to our patients. We care deeply about our population and see clearly the difference cutting edge technology and insight can make in supporting our vision to be the best.

2022 is an important moment in history for digital transformation in the NHS. Technology is never more relevant and essential in our lives and in our work. In the delivery of healthcare, digital has taken centre stage. The Covid-19 pandemic accelerated the use of technology in how care is delivered:

- ✔ through the use of apps to monitor and record infection and vaccination status;
- ✔ the use of remote consultation to provide care at a distance when face to face presented heightened risk;
- ✔ mobilising rapidly to enable swathes of people to work remotely to limit contact and arrest the spread of infection.

This digital update details how care has been delivered differently in Bradford as technology, data, intelligence and insight becomes ever more embedded in our daily work. It previews our ambition to continue to operate in increasingly digitally enabled and information rich ways. It documents the shift whereby digital has moved from being what the IT department does to how everyone works.

Our approach is grounded in delivering brilliant basics for the benefit of staff, patients and our communities. We are fiercely ambitious and pioneering in the ways that digital technology data intelligence and insight inform what care we provide and how we provide that care. It helps enable and empower our patients, their families and communities to care for themselves more effectively and access treatment in a timely manner.

We welcome your feedback as we embark on this crucial next phase of our digital journey.

Dr Paul Rice PhD
Chief Digital and
Information Officer

Dr Paul Southern
Chief Clinical
Information Officer



**OUR APPROACH IS
GROUNDED IN DELIVERING
BRILLIANT BASICS FOR THE
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AND OUR COMMUNITIES
WHILST BEING FIERCELY
AMBITIOUS AND PIONEERING**



Our strategy

AMBITIOUS

We want to be at the forefront of exploiting the opportunities that digital healthcare provides, ensuring our patients access best quality care underpinned by cutting edge technology.

DIVERSE

We will create a team of many talents, a workforce of mixed experience and heritage working together with our vibrant and engaged communities to develop and thrive.



RESILIENT

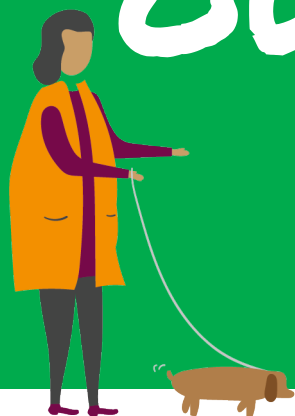
We know that to deliver the best care needs strong digital infrastructure. Enjoying the confidence of our communities in the role of digital technology in their care and how we use their data is essential. We must respond to an ever-changing threat environment; Cyber Security remains paramount.

SUSTAINABLE

Increasingly we will grow the skills and build capacity with local partners to deliver our digital ambitions. We will address the digital divide, prioritise digital and data literacy and help secure access to technology to ensure that the benefits of new models of care can be appreciated by everyone.



OUR PATIENTS,
OUR PEOPLE,
OUR PLACE AND
OUR PARTNERS.



Bradford Teaching Hospitals NHS Trust's Corporate Strategy



We care, we value people, we are one team

Our Patients, Our People, Our Place and Our Partners explains how we will work towards our vision to be an “outstanding provider of healthcare, research and education and a great place to work”.

We are proud to be part of the Bradford District & Craven Health and Care Partnership, with a shared ambition to act as one to keep people happy, healthy at home.

We have developed this strategy with our patients, our people, the public and our partner organisations. It explains how our ambitions are not simply a list of things we want to do. They are coherent and mutually reinforcing and will ensure that we meet our strategic objectives.

We are committed to making a difference to everyone who needs our care. We recognise that we will best do this by developing high quality, innovative services and by continuing to develop and embed a culture of kindness to ensure a positive patient experience.

What we will focus on

- ✓ Delivering outstanding nursing and midwifery care
- ✓ Providing outstanding patient experience
- ✓ Delivering high quality services
- ✓ Delivering a virtual hospital as part of a clinically led transformation
- ✓ Using digital technology, data and insight to transform how we deliver care
- ✓ Restarting and recovering planned care after COVID-1

**WE ARE COMMITTED TO
MAKING A DIFFERENCE
TO EVERYONE WHO NEEDS
OUR CARE**



West Yorkshire Health and Care Partnership, Bradford District and Craven and Act as One

West Yorkshire Health and Care Partnership is an 'Integrated Care System' that works in partnership with NHS organisations, councils, Healthwatch, charities and the community voluntary and social enterprise sector to improve the health and wellbeing of local people. As a large and diverse region, much of its delivery happens at five local 'places', of which Bradford District and Craven (BDC) is one. In BDC we 'Act as One', to best ensure people will be healthier, happier, and have access to high quality care that is clinically, operationally and financially stable.



***WHEN PEOPLE NEED ACCESS
TO CARE AND SUPPORT IT
WILL BE AVAILABLE TO THEM
THROUGH A PROACTIVE AND
JOINED UP HEALTH, SOCIAL
CARE AND WELLBEING
SERVICE DESIGNED AROUND
THEIR NEEDS.***



West Yorkshire Digital Strategy



The WY Digital strategy has a vision for the future of technology, where people can use digital channels to access services and monitor their own health, where services are designed using evidence from data, and where a member of staff can work from anywhere in the Region by accessing the information that they need to care for them as individuals.

When we achieve this vision:

- ✓ Our population will have the option to use digital channels to access health and care services and to communicate with our workforce
- ✓ Interactions with health and care professionals will utilise a variety of options including in-person, by video, telephone and messaging to best meet individual needs, ensuring alternatives for those who are less comfortable or confident with digital technology
- ✓ Health and Care services will use innovative technologies to deliver services
- ✓ Our workforce will have seamless access to the information they need to deliver care and to work in any location without facing technological issues
- ✓ Our population will be able to access and contribute to their own records
- ✓ Fewer people will be excluded from the benefits of digital developments because they cannot access a device, or do not have the necessary skills
- ✓ We will leverage maximum benefit from the data we collect and generate, so that we can inform and support decision making to improve the health of our population
- ✓ We will implement business processes so that patients, carers and members of the public who are unable or choose not to use digital solutions will have access to services via non digital channels





OUR PRIORITY PROGRAMMES

Digital technology is central to delivering our priority programmes and activities.



Virtual Royal Infirmary

Our Virtual Royal Infirmary (VRI) is delivering a virtual hospital, without walls, where a patient's treatment and care can begin and end in their own home with support from our fantastic people every step of the way. Not only can we deliver clinical care safely, but patients are spared the need to travel to, or stay in, hospital unnecessarily.

The development and use of virtual and digital alternatives to more traditional methods of caring for patients increased considerably during the COVID-19 pandemic. They were so successful that we are expanding their use and have created a programme of work to ensure delivery of what we call our Virtual Royal Infirmary (VRI).

- ✓ Virtual services give patients more control of their health, providing access to information, guidance and help about their condition.
- ✓ Being cared for in their own home, or usual place of residence, not only cuts down on the need for patients and their families to travel to, and stay overnight in, hospital. It also aids recovery as patients receive high quality safe care in familiar secure surroundings, sleep better and remain more active.

- ✓ We use GP Assist and other virtual services to seek advice from specialist clinicians at the Trust about appropriate treatment plans without the need to formally refer the patient to hospital.
- ✓ By keeping people out of hospital unless they really need to be admitted, virtual services free up hospital capacity for the very sickest patients and allows those people requiring surgery or other procedures that cannot be done at home to have them carried out more quickly.

**DELIVERING A VIRTUAL HOSPITAL,
WITHOUT WALLS, WHERE A
PATIENT'S TREATMENT AND CARE
CAN BEGIN AND END IN THEIR
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**VIRTUAL SERVICES GIVE
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Virtual Outpatients

'Digital by Design' outpatient appointments mean that patients can 'attend' many appointments without the need to travel to BRI, St Luke's Hospital and other clinics. This can also include consultations and assessments that patients may need before coming to hospital for surgery or to support managing a long-term condition.

Virtual Wards

In a virtual ward, support can include remote monitoring using apps, wearables and medical devices such as pulse oximeters, in addition to face-to-face care from multi-disciplinary teams so that all specialties can deliver an appropriate element of care.

Virtual patient education

Taking control of their own healthcare, learning how to prepare ahead of surgery and do the right things to support recovery following treatment, empowers patients and helps improve outcomes. Patients already receive a wide range of education; our aim is to make this even more accessible through a combination of bespoke physical and virtual resources.

Command Centre

BTHFT has one of Europe's leading command centres. This gives us a better picture of activity and flow across the hospital at all times. It provides a clear real-time overview across with all our 800 beds helping highly qualified clinical staff to make quick and informed decisions on how best to manage patient care. Data is displayed on screens in the Command Centre – plus ward based tablets and mobile devices. This 'wall of analytics' constantly pulls in streams of real-time data to anticipate and resolve bottlenecks in care delivery and improve throughput.

More than 96 per cent of bed capacity at BRI is used regularly and the hospital's A&E department attracts 125,000 attendances each year, up 40 per cent in the last 10 years.

The Command Centre allows us to boost our operational efficiency and relieve pressure from our dedicated staff.

"OUR AIM IS TO ENSURE THAT WE MAKE NON-FACE-TO-FACE, TELEPHONE OR VIDEO OUTPATIENT APPOINTMENTS THE NORM, WITH A PARTICULAR FOCUS ON FOLLOW UP APPOINTMENTS."

Prof Rachel Pilling
Consultant Ophthalmologist



Bradford Institute for Health Research

Through the Bradford Institute for Health Research (BIHR), Bradford Teaching Hospitals has supported clinical research for more than 20 years and, in the last 10, research activity has increased dramatically with over 550 research projects ongoing.

The BIHR is a collaborative partnership between the Trust and other local NHS trusts and primary care, as well as the universities of Bradford, Leeds and York. It provides a critical mass of research expertise, a focus for our applied health research and accommodates both clinical and non-clinical research teams.

The power of data intelligence and insight cannot be underestimated in informing how and where we provide services to meet patient need and address health inequalities.

EPR

Our EPR (Electronic Patient Record) is the digital backbone of the care delivered by every member of staff at Trust. This 'single source of truth' was introduced at BTHFT in 2017, as part of a joint programme with Calderdale and Huddersfield NHS Trust. The system now supports the management of most patient care and interfaces with other specialist systems such as Radiology and Pathology.

The system, Cerner Millennium, is recognised as one of the leading EPRs in the world and is used by over 144,000 health and care professionals across 24 NHS Trusts to manage 1.5 million patients every month.

Every interaction with our patients uses the EPR to record what is discussed, any treatments or advice given or any procedures that take place. This information is crucial because it provides a continuous record of care making it safer and more efficient.

EPR is much more than a digital version of written notes. It also helps us to run our hospital and our services, allows clinicians to order tests or medications electronically, review results remotely and see which beds are in use. It can prompt appropriate medicines administration, support multi-disciplinary care planning and flag up potential risks or allergies. By pulling together different pieces of information predictively suggest emerging illness or decline in a patient that might otherwise go unheralded.

The two trusts continue to work side-by-side to develop the system, sharing a core team who manage it day to day as well as supporting optimisation activities and planning and executing developments.

EPR (ELECTRONIC PATIENT RECORD) IS THE DIGITAL BACKBONE OF THE CARE DELIVERED BY EVERY MEMBER OF STAFF AT TRUST





Developments

In March 2022, Maternity and Neo-natal services upgraded their EPR by introducing the Cerner Millennium Maternity module. This significant change was successfully delivered even though much of the programme was being managed through the pandemic. The new system improves the care that we can provide to mums to be and their newborn babies.

As part of the 'Outstanding Theatres' improvement programme, the Theatres and Anaesthesia module of Cerner Millennium has been purchased and a programme has begun to improve care in the trust's operating theatres. This investment will see the vast majority of the Trust's major clinical services delivered within a single EPR.

Optimisation

The clinical informatics team work continuously with colleagues across the Trust to make best use of this important tool. In the past year this has included:

- ✓ Improvements to how the system supports staff to order lab tests, x-rays, and medications for common diagnoses, making care safer and more efficient
- ✓ Support to get patients home more efficiently at the end of their hospital stay, by using the EPR as a better discharge planning tool
- ✓ An upgrade of the guidance and documentation that supports staff use the EPR most effectively



Other clinical systems

In addition to our EPR, the Trust has several other systems that are crucial to how care is delivered. Many of these are shared with other Trusts or managed across Place or Regionally.

ICE

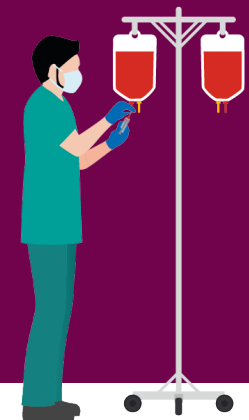
BTHFT and ANHSFT work together to upgrade pathology IT systems, so they are more modern, reliable and efficient. An application to the ICE (Integrated Clinical Environment) took place in May 2022. ICE interfaces with our main EPR, and is used for ordering pathology, radiology and endoscopy tests and viewing patient results. Upgrading ICE ensures we can continue to provide resilient data about our patients and as other organisations upgrade their systems we will increasingly be able to view results from other Trusts such as Leeds and Mid-Yorkshire.

Digital cardiology

For some disciplines e.g. Cardiology, dedicated systems supplement our core EPR to support specialist clinical work. We are currently upgrading several existing systems, and introducing some new ones to improve resilience and performance, creating fewer interfaces with EPR to ensure that patient information can be shared readily and consistently across the Trust.

Scan for Safety

As a partner in the 'Scan for Safety' programme BTHFT is participating in a pioneering initiative by using a common barcode identifier to improve clinical productivity and supply chain efficiency.





NEW DIGITAL DEVELOPMENTS



Digital appointment letters and beyond

The Trust is continuously looking for ways to improve patient experience. Working closely with supplier DrDoctor the Trust has rapidly moved to a 'digital by default' approach to appointment letters. With around 1.5m letters sent every year we are substantially reducing our annual spend on printed letters whilst providing patients a wider range of communications options.

The DrDoctor Patient Portal notifies and sends all patients their hospital letters. If the patient does not view the letter online within a set timeframe, or if they had already set their letter preferences to print, they are sent a paper letter automatically. This ensures that no patient misses any important communications.

500,000 digital appointment invites have been sent in the last 12 months, with 60% of eligible patients choosing a digital letter format. This programme is being jointly delivered with our neighbours at Airedale NHS Foundation Trust.

Patients also now automatically receive appointment reminders via SMS, email or by viewing details on the Patient Portal.

A customised SMS message informs and reassures patients as to exactly how far they have progressed along their journey of care and the next planned steps.

Our new focus is on gathering information digitally to support pre-operative assessment where patients are scheduled for surgery. This saves time in clinic and encourages patients to better engage with their treatment before visiting hospital.

The Trust is also introducing a digital consent process whereby patient's permissions to treat are acquired and stored correctly and securely reducing unnecessary paper use and the need for scanning.

Introducing RPA: Robotic process automation

RPA automates time-consuming everyday tasks that are carried out by hospital staff. Used appropriately it can release staff to concentrate on more complex tasks, deliver more face-to-face care and improve safety.

Safer medication management through automated medicine dispensing cabinets

Managing medications effectively is a critical part of providing highest quality patient care. Automated dispensing cabinets bring regularly used or controlled drugs closer to the point of administration of medicines securely. Working like a 'vending machine for medicines' the cabinets hold a store of medicines in ward environments. Using barcode scanning, they automatically dispense medicines and update stock level records. Linking directly to a patient's record to ensure a complete picture of medication usage provides essential additional safety.

In 2022, BHTFT began installing Omnicell cabinets in some ward areas, and following a successful pilot will continue to roll them out where required organisation wide.

IMPROVING OUR INFRASTRUCTURE, CYBER SECURITY AND INFORMATION GOVERNANCE



Wi-Fi and network review

In March we conducted detailed Wi-Fi and wired network surveys to inform our infrastructure investment strategy. The proposed overhaul will extensively upgrade the network to an ultra-modern standard to ensure the digital skeleton underpinning our estate are fit for purpose for the years to come.

Cyber security

To protect our digital systems we are constantly vigilant about external threat. We adhere to required national standards and engage with partners and experts to ensure we deploy the best current protections and defences. We have robust business continuity plans in place.



Modern telecommunications

We successfully replaced aged and fragile infrastructure and equipment at the heart of our hospital switchboard with modern resilient technologies to future proof our communications capability.

Information governance

Keeping patient information safe and secure is central to our role as a healthcare provider, and with more information being held digitally, ensuring that we have the right safeguards in place has never been more important.

BTHFT's retains an unwavering focus on information governance. We met all the standards required by the Data Security and Protection Toolkit Annual assessment.

Data Protection Impact Assessments (DPIAs) are core to ensuring that this standard is maintained, and these are carried out regularly across the Trust.





PEOPLE FIRST DIGITAL FIRST



Digital across Bradford District and Craven

BTHFT plays a key role as a partner in People First: Digital First, the digital strategy for Bradford District and Craven. The vision is;

- ✓ There are fully interoperable electronic health records
- ✓ Staff and citizens are equipped and prepared to use digital tools in health, wellness and care.
- ✓ Clinical engagement in digital initiatives ensures solutions are helping clinicians to better care for patients.
- ✓ We continue to be a vanguard for telemedicine in care homes which means care homes have video conferencing access to clinicians
- ✓ By using artificial intelligence to analyse our data we can assist in determining when patients would do better with other interventions than coming into the hospital;
- ✓ We can use tele-medicine and technology to 'see' patients where they are and help them manage their conditions better outside of hospital with and without our virtual help
- ✓ We employ home monitoring devices instead of in-hospital monitoring to keep people at home

Joining up health and care records – for care and research

People First: Digital First plans to join up health and care records across the place, so that health and care staff have access to the complete picture of a patient's health and social care. This helps them to make better decisions to support patients, saves time and increases the confidence of those using services, avoiding the need to retell their story each time they see a professional.

Beyond this, de-identified (anonymised) information will be securely linked together from across primary, secondary and community services, to support local research teams in understanding how patients move across and through the local health system. This 'big picture' perspective will allow services to be re-designed, offering more personalised and prevention-focused support to patients.

**PEOPLE FIRST: DIGITAL FIRST
PLANS TO JOIN UP HEALTH AND
CARE RECORDS ACROSS THE PLACE**



More out of hospital care: the digital care hub

The Digital Care Hub, managed by Airedale NHS Foundation Trust is the culmination of over a decade of cutting-edge development work in the fields of telemedicine and digital health. The Hub currently provides round-the-clock care support to 500 care homes nationwide, over 2000 patients in their last year of life, more than 30 prisons, and thousands of patients with long-term conditions living in their own homes.

The Hub is now providing clinical support to 123 care homes in the Bradford, Airedale, Wharfedale and Craven district during the coronavirus outbreak. From video consultation to remote monitoring, the Hub uses digital technology to deliver the very best care possible.

Improving digital skills

As the delivery of healthcare becomes increasingly digital, it is crucial that our people have the skills needed to work confidently and safely in the future. BTHFT is participating in the digital skills capacity and capability pipeline programme, ensuring that these skills are developed locally.

The Trust has a commitment to working alongside local education providers, including schools, colleges and Bradford University, to offer opportunities for existing and future staff to develop the skills needed to care for our patients. Whether this is supporting clinicians to become more confident in using digital tools, working with medical, nursing and AHP students to prepare them for the world of work, or considering how those working in IT or software development get the skills they need, our partnerships will ensure that we're at the centre of future planning.

THE TRUST HAS A COMMITMENT TO WORKING ALONGSIDE LOCAL EDUCATION PROVIDERS TO OFFER OPPORTUNITIES FOR EXISTING AND FUTURE STAFF, TO DEVELOP THE SKILLS NEEDED TO CARE FOR OUR PATIENTS.

