Digital, Data & Technology Strategy

2022-2026

NHS
Milton Keynes
University Hospital
NHS Foundation Trust

Contents

Executive Summary

Digital needs to be in our DNA

This document outlines the digital, data and technology (DDT) strategy for Milton Keynes University Hospital over the next four years and links cohesively with the Trust's clinical and workforce strategies, as well as nationally curated ambitions, to maintain strong synergy across all overarching goals.

The strategy articulates our collective ambitions to become exemplary leaders in digital health innovation; creating a culture that promotes confidence in rapid digital development by prioritising our digital user needs. In doing so, we will give everyone a voice and a stake in discovering and designing ethical, efficient and person-centred digital tools, that support us in delivering excellent care to our patients. Digital tools won't slow us down, rather, they will intuitively support the natural flow of our workforce and our patients' healthcare requirements.

Transforming the care environment

By 2026 we hope to have radically transformed our care environment, by linking digital processes seamlessly with new models of care. We will know we are on track when we achieve internationally recognised certifications, alongside a digital maturity rating that sits within the top 10% of hospitals in the NHS.

Furthermore, as our estate evolves over the next four years, we will investigate how sensor technology can enable us to take control of our buildings and how they behave, creating opportunities for all users of our hospital to personalise the care environment. And through the creation of digital twins, we will set in motion the rapid development of a healthier estate, with data insights from our built environment supporting the Trust's ambitious Green Plan to reach net zero carbon emissions by 2030.

Milestones like these prove that we can use digital technology to improve patient care and experience. They also show that we are digitally driven and have full control and confidence in our organisational data. But fundamentally, they enable us to level-up to our user's expectations, inspiring us to continue building a digital ecosystem of elegant, intuitive solutions, where everyone can benefit from faster access to bleeding edge technology and more efficient delivery of care.

Reflecting and looking forward

In 2019, the Covid-19 pandemic brought about a new focus for digital at our Trust and almost two years on, has allowed us to reflect on where our digital investment has supported and enhanced our care services, as well as identify where it has slowed us down.

To achieve the goals set out in this strategy, we need to work together to continue to close digital loops around our care pathways so that systems truly align, and information can be joined to form a comprehensive view of our population health. These efficient digital loops will help to simplify communication between us, our patients, and our community partners, with one source of information for all, encouraging a more connected and collaborative way of working together.

Our Trust

Who we serve

Milton Keynes Hospital NHS Foundation Trust was founded on 1 October 2007. The Trust partnered with the University of Buckingham to establish the first independent Medical School in the country; and in April 2015, changed its name to Milton Keynes University Hospital NHS Foundation Trust to reflect this status.

The Trust typically has circa 90,000 emergency department attendances, more than 58,000 emergency/elective admissions and 384,000 outpatients' attendances (some activity was lower in 2019/20 due to the impact of Covid-19 – details are provided in the Trust's Annual Report and Accounts 2019/20).

In 2019/20, after adjusting for specific items relating to Covid-19, the Trust met its agreed financial control total for the seventh consecutive year. The most recent CQC assessment of the Trust (undertaken in 2019) rated it as "good", overall.

In 2019 MKUH was recognised as one of 40 NHS Trusts to receive seed funding through the New Hospital Programme. In 2020 the Trust submitted a Strategic Outline Case, articulating a need to develop a new Surgery Block, Women & Children's Hospital and Imaging Centre, with digital innovation a core component in transforming models of care.

The Trust is part of the Bedfordshire, Luton, and Milton Keynes (BLMK) Integrated Care System (ICS). The population of the four local areas of Bedford Borough, Central Bedfordshire, Luton, and Milton Keynes is circa one million.

The hospital has around 550 beds and employs over 4,000 staff, providing a full range of acute hospital services and an increasing number of specialist services to the growing population of Milton Keynes and surrounding areas. All inpatient services and most outpatient services are provided on the main hospital site.

Milton Keynes town now has a population of 273,000 and is forecast to grow by a further 72% to 469,000 over the next 30 years at an average rate of 2.4% per annum.

To put this in a national context, the Office of National Statistics expects that the UK will grow by an average of 0.84% per annum in the thirty years to 2043. A growth rate of almost three times the national average brings real challenges to our hospital. Even with the advances of modern medicine moderating the need for beds and inpatient interventions, the Trust will need to grow its digital and physical estate to accommodate this phenomenal increase in demand.

384,000 outpatient attendances

90,000 ED attendances

58,000 emergency/elective admissions

Our goals and objectives

In 2021, the Bedfordshire, Luton and Milton Keynes (BLMK) Integrated Care System (ICS), of which MKUH is a partner of, listed key capabilities that characterise their future approach to data and insights, that, given a steady direction of travel from the current state, should be achievable within a period of 18 months.

Within their future state analysis, there is a clear driver to improve data culture amongst partners, encouraging a strong "whole-system" value approach to data that underpins place-based priorities and decision making.

To achieve this, BLMK will create knowledge sharing communities between partners, particularly around deployment of advanced analytics initiatives to upskill staff on the 'art of the possible.' BLMK will also look at opportunities for collaboration with neighbouring partners outside of the ICS.

Self-service dashboards will be developed to be used across the ICS; with timely data alleviating some of the pressures on BI Analysts, allowing staff to focus on more value-adding analytics.

There is an expectation that partners understand the resourcing required to make these changes, and BLMK will work with partners to map capacity requirements between internal business as usual and wider ICS activities, informing future funding and shared capacity discussions.

An aspiration for the future is to create a resident's portal that is connected to care records, enabling both oversight of a patient's own healthcare data, alongside self-management of data and data privacy.

For this to be successful, there is a need to ensure their partners create robust electronic healthcare records that provide a comprehensive overview of residents' longitudinal care records, with close to real-time data accessible to clinicians for direct care decisions.

The BLMK Data Strategy lists the following goals as their strategic objectives over the next 18 months:

1 **Leadership and Accountability**
Designated data lead drives investment and change in line with agreed partnership priorities and requirements.

2 **Data Governance & Management**
Easily accessible data assets with auditable, searchable metadata siting above an assured, high-quality dataset.

3 **Information Governance**
IG is a core capability, embedded in strategic decisions and well resourced - supporting an upskilled, IG literate workforce.

4 **Reporting and Analytics**
Reports and analytics are automated, with standardised QA and advanced data science insights regularly embedded.

5 **Data Culture**
Data is championed as a critical enabler by all – with a culture of accountability and data literacy.

6 **Skills and Talent Management**
All relevant staff are confident using data and have role-based data training with a resource and succession plan for the data profession.

7 **Embracing Innovation**
Data unit manages pipelines of innovative use cases and implementation of advanced tools e.g., NLP and automation.

8 **Tools and Technology**
Cloud tech allows for cost effective, scalable, tools to be used on fully interoperable data and systems for advanced analytics & evaluation.
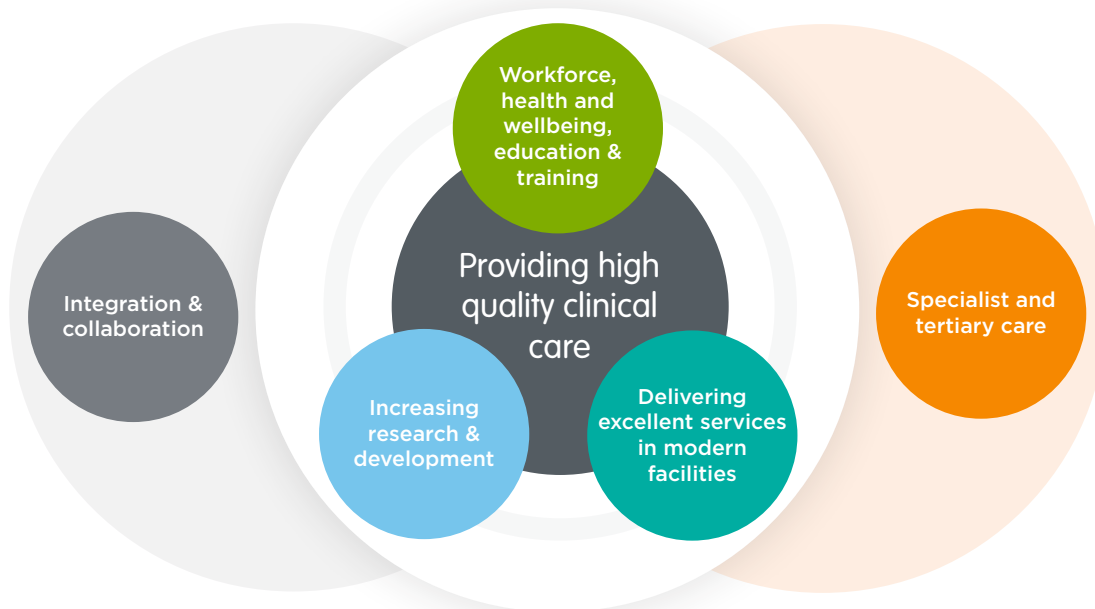
The MK Way

The Trust's overarching values, strategy, and objectives for MKUH are collected under the banner of "The MK Way", which provides the framework in which the Trust operates.

The Trust's vision is:

"To be an outstanding acute hospital and part of a health and care system working well together."

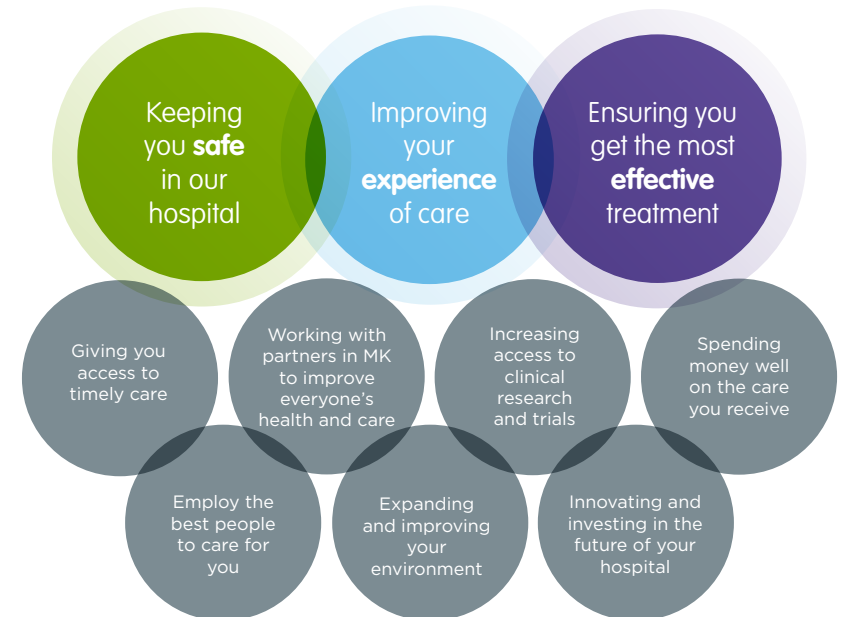The Trust's strategy has five key priorities, as shown below.

TheMKWay

CARE. COMMUNICATE.
COLLABORATE. CONTRIBUTE.

Our priorities are underpinned by ten strategic objectives, which were refreshed in 2021 and will remain in place until 2026.

These objectives guide an overarching standard across all our services and should be reflected as specific investment objectives across our digital portfolio.

Integration & collaboration

Workforce, health and wellbeing, education & training

Providing high quality clinical care

Increasing research & development

Delivering excellent services in modern facilities

Specialist and tertiary care

Keeping you **safe** in our hospital

Improving your **experience** of care

Ensuring you get the most **effective** treatment

Giving you access to timely care

Working with partners in MK to improve everyone's health and care

Increasing access to clinical research and trials

Spending money well on the care you receive

Employ the best people to care for you

Expanding and improving your environment

Innovating and investing in the future of your hospital

MKUH Workforce Strategy

Delivering the best possible outcomes

Our workforce strategy was recently refreshed and outlines the Trusts' workforce objectives from 2021 through to 2024.

The overarching goal is to have the right number of appropriately skilled, caring, and compassionate people available to make our hospital experience consistent, safe, and secure, delivering the best possible outcomes.

Furthermore, there is an ambition to be in the top 10% of acute staff surveys nationally; and become an exemplar Trust for Equality, Diversity & Inclusion (ED&I).

The strategy links directly to our Trust's values and objectives to improve workforce effectiveness and engagement, resulting in an improved staff experience, which in turn leads to an improved patient experience.

The following three themes outline our roadmap to successfully delivering on our workforce commitments:

"Develop our people to ensure our values are reflected in all their interactions and that they treat everyone with empathy, compassion, kindness, and respect."

- Embedding our values into all staffing processes and procedures
- Delivering the "Living our Values" Trust wide programme and helping colleagues evidence our values in all they do

- Development opportunities to enable colleagues to feel happy in their roles and supported in their long term careers
- Continuing to grow our health and wellbeing and benefits offerings
- Developing our supervisor, leadership and management training programmes
- Developing our role/career specific training programmes
- Expanding the capacity and capability of our internal Organisational Development (OD) team
- Expanding our flexible working offering and embedding agile working practices across all areas

"Support our people to be healthy, happy, and safe in their roles, able to grow their careers at MKUH and access the development they need."

"Ensure we have the required people, representative of the community we serve."

- Filling our vacancies
- Developing our Equality, Diversity & Inclusion programme
- Making MKUH an employer of choice

MKUH Nursing and Midwifery Strategy

Improving the patient experience

Our Nursing and Midwifery strategy was refreshed in 2022 and outlines five ambitions that will support our staff to be the best that they can be. Each ambition is championed and co-led by a senior nurse and senior midwife. Technology, innovation and research is seen as being a key enabler in delivering expert care that is evidence-based and that encourages and supports our staff to learn and adapt best practise techniques to improve on patient experience.

Leadership for all

Professionalism, inclusivity and civility

Models of delivering care

Lifelong learning

Technology, innovation and research

Our Commitment to the Teams

Our people will be our success

New technology

- We will use technology to share knowledge and expertise about our individual patients.
- We will use apps to develop understanding of new evidence base for conditions.
- We will explore digital platforms to improve efficiency.
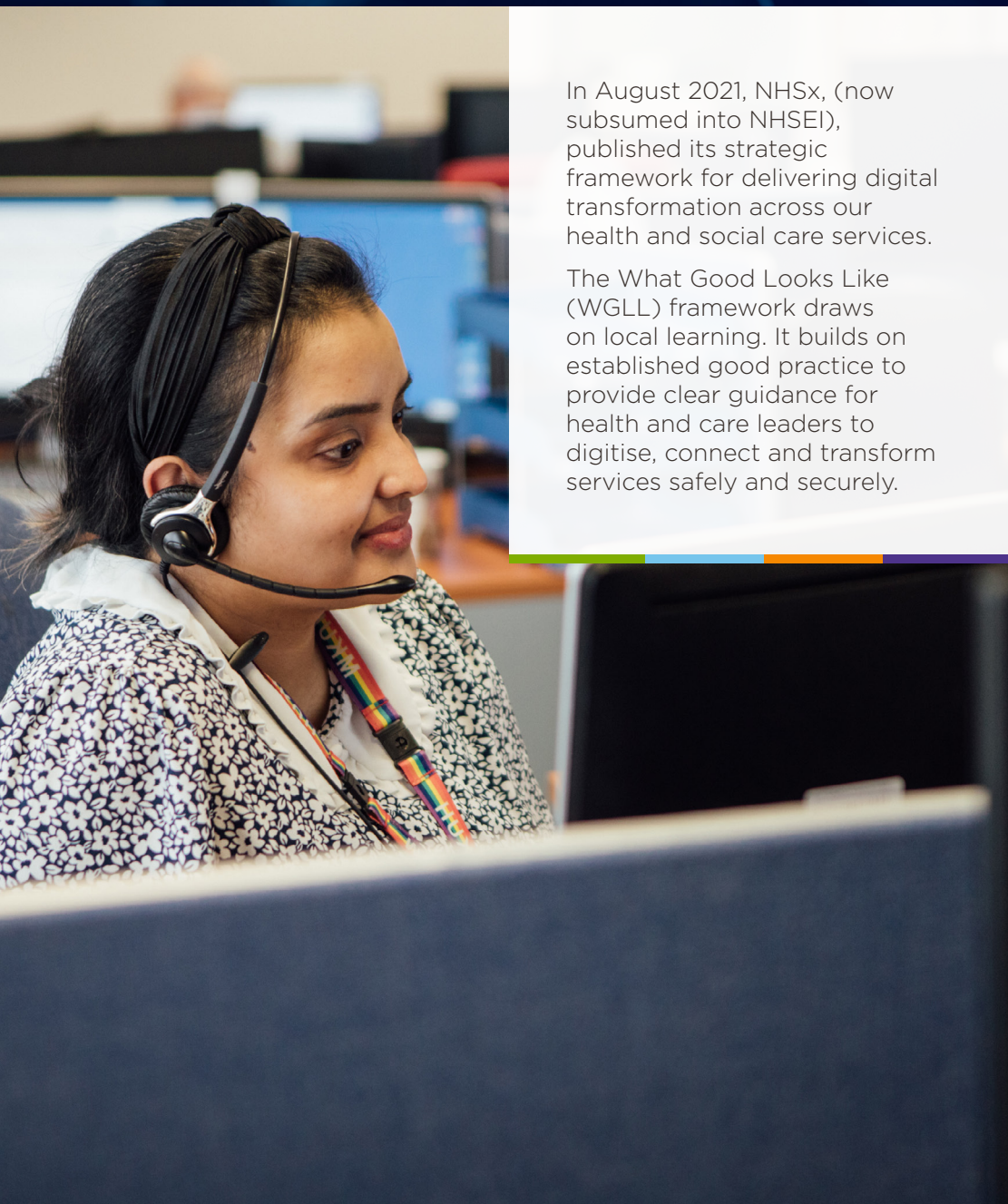
Evidence based practice

- We will talk about the importance of evidence-based care and the importance of keeping up-to-date.
- We will offer support and encourage staff to write for publication.
- We will create a nursing and midwifery led symposium to share best practice.

Research and clinical audit

- We will encourage all to undertake research and share the output of research through Trust forums and through publications.
- We will increase knowledge of the research available and support teams to ensure that research is accessible to all.

Our Commitment to the Teams

What Good Looks Like

In August 2021, NHSx, (now subsumed into NHSEI), published its strategic framework for delivering digital transformation across our health and social care services.

The What Good Looks Like (WGLL) framework draws on local learning. It builds on established good practice to provide clear guidance for health and care leaders to digitise, connect and transform services safely and securely.

The WGLL framework has seven success measures:

1 **Well led**
Articulating a need to develop clear digital strategies and align these across Integrated Care Systems.

2 **Ensure smart foundations**
Ensuring digital, data and infrastructure operating environments are reliable, modern, secure, sustainable, and resilient.

3 **Safe practice**
Maintain robust cyber security practices as well as routinely review system-wide security, sustainability, and resilience.

4 **Support people**
To build digital tools and systems that are fit-for-purpose and support staff to do their jobs well.

5 **Empower citizens**
Ensuring citizens can access and contribute to their healthcare information, taking an active role in their health and wellbeing.

6 **Improve care**
Embedding digital and data within their improvement capability to transform care pathways, reduce unwarranted variation and improve health and wellbeing.

7 **Healthy populations**
Using longitudinal data to design and deliver improvements to population health and wellbeing, making best use of collective resources; with insights from data used to improve outcomes and address health inequalities.

Digital User Research

Understanding our goals

In 2021, the Trust's technical teams ran a series of user story workshops to better understand our workforce's real-life user goals and discover where gaps in technology exist within our digital portfolio. The sessions ran in parallel with the development of the Trust's strategic outline case for the new hospital programme, and included representation from our surgical, women's and children's, and support services.

User stories represent a role, a scenario, and an acceptance criterion, and allow us to target specific goals or themes that can be linked to support a system approach to digital development.

Our user story workshops bring the best minds together and allow us to collaboratively discuss everyday problems and frustrations in an open forum. They are a place where everyone has a voice and a part to play in discovering and creating digital solutions.

This helps to build trust and understanding across multi-disciplinary teams, as everyone is made aware of each other's user goals. Furthermore, through discovery of connected stories and themes, our staff are given a stake in digital innovation, encouraging healthy engagement throughout projects and programmes of immense change.

The results from our user story workshops identified 150 user stories that were grouped into the following 12 themes.

"As a clinician

I want to use virtual reality to prepare patients for an upcoming treatment

so that they are better informed and less anxious about treatment."

Resource Planning and Management
This theme focuses on the planning and efficient management of staff, equipment, and consumables.

Patient Communications and Information
This theme looks at how and what is communicated to our patients.

Facilities Management
This theme focuses of the efficient management of facilities.

Patient Experience
This theme focuses specifically on initiatives to improve the patient experience.

Patient Flow
This theme contains user stories relating to the effective and efficient movement of patients.

Staff Communications and Information
This is to do with how information is shared to clinical and other staff in the hospital.

Task Management
This theme looks at efficient ways of managing staff tasks and activities.

Patient Care
This theme focuses on the effective delivery of patient care.

Security
This theme relates to providing the necessary level of security for staff, patients, and visitors.

Data Entry and Access
This theme focuses on the efficient and accurate capture of data.

Data Analytics and BI
This theme is focused on the delivery of business intelligence and analytics insights.

Supplies Management
This theme contains user stories focused on the efficient management of medicines and medical supplies.

Digital User Experience

Guiding our digital development

Today, we use more digital solutions at work than ever before and the more systems we implement, the more that we rely on them to carry out our daily tasks. As a result, our IT Service Desk has seen a significant growth in activity and in 2021, we received 46,979 requests or incidents, with 43% of tickets being raised over the telephone. This activity is likely to remain as we continue to build on our digital portfolio.

On occasions where we need support and guidance from our digital teams, it is important for it to be timely and hassle free. We recognise that by having multiple channels of communication, we are better able to connect with our staff; offering a service that is truly inclusive and convenient for everyone in need of assistance. Furthermore, as vital as our service is in maintaining safe, efficient, and useful digital solutions, requests and incidents also play an important part in signposting opportunities to innovate and discover better ways of working; guiding our digital development towards the outcomes our staff and patients expect.

Over the next four years, our digital strategy will focus on upholding the high level of support and experience that are vital to our services, with Service Desk requests being captured by phone, email and webform, as well as chatbot; solving problems and offering support, faster than ever before.

As technology advances, our digital team also receive many more requests to support or install new systems, and currently manage an active portfolio of over 100 digital projects. We recognise that each request is important to our staff and that it is equally important for all projects to be delivered in a timely and effective way. To do this, we pledge to work more closely with all staff to align projects to a growing portfolio of work. We promise to get better at providing instant visibility on progress, as well as help find the resource and skills needed to support a project, from business case development to, delivery of new systems.

46,979 Tickets

40% Reduction on Call Waiting Times

124 Total Projects

36% of Tickets Logged Online

Average of 8 Minutes Per Call

6 Communication Channels
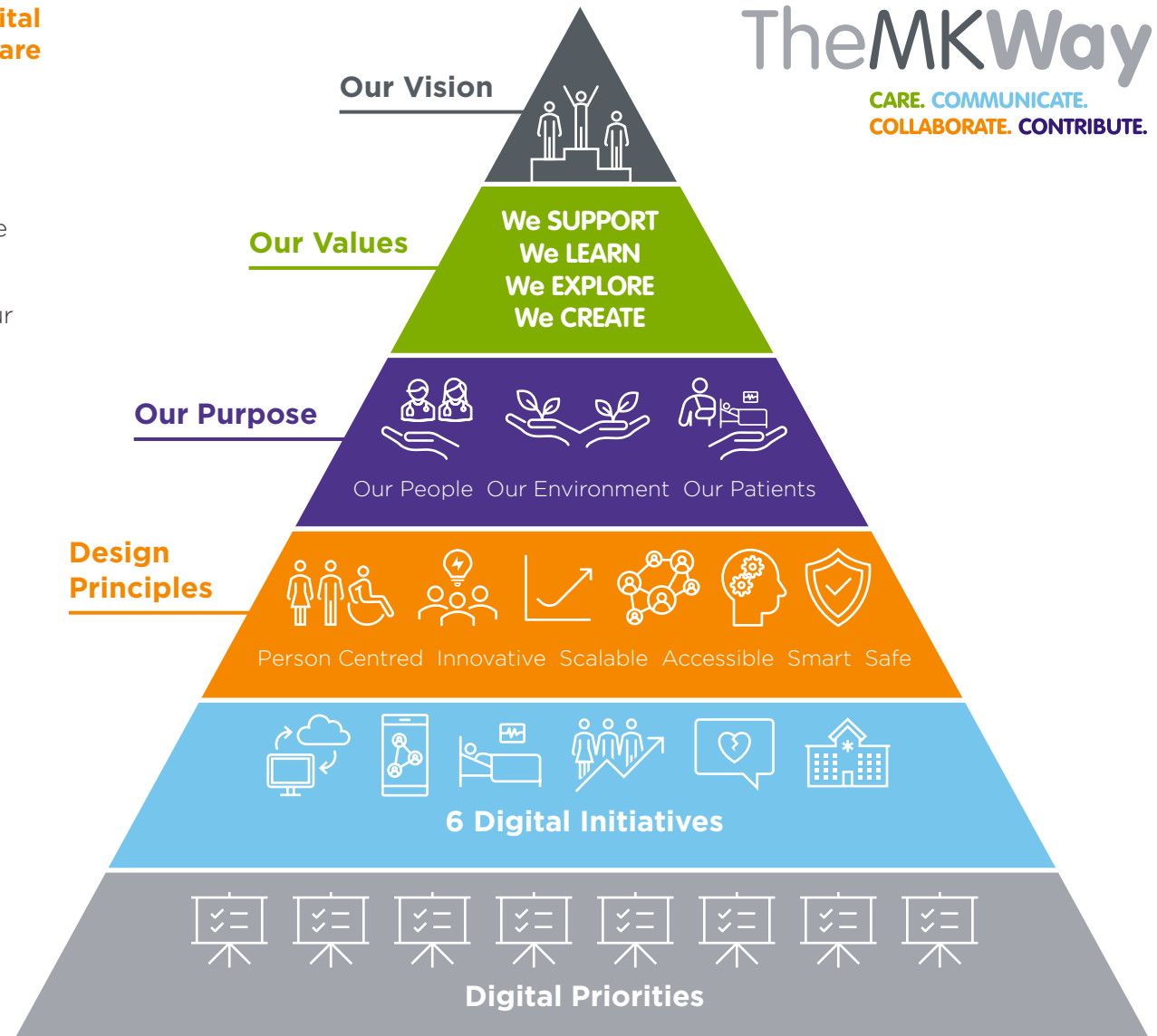
Digital Vision

Exemplary leaders

Our vision is to become exemplary leaders in digital health innovation; working alongside our healthcare system to promote safe, ethical, and person-centred digital design. Our collective efforts will support us in building one of the most digitally mature healthcare organisations in the world.

By 2026 we hope to have radically transformed our care environments, linking digital processes seamlessly with new models of care. Digital tools won't slow us down, rather, they will intuitively support the natural flow of our workforce and their patient's needs.

We'll know we're on track when we achieve HIMSS 7 (EMRAM) certifications across both inpatient and outpatient settings, as well as demonstrate that our digital infrastructure is of a high maturity by achieving a level 7 HIMSS (INFRAM) certification.

We also recognise that digital technology can play an important part in transforming our buildings, and to make sure our vision supports our hospital in becoming both smarter and kinder, we will investigate into how sensor technology can enable us to take control of our buildings and how they behave; creating opportunities for all users of our hospital to personalise the care environment.

Our digital vision is underpinned by our values, purpose, and principles; all of which complement the 'The MK Way'. By working together to deliver on our strategy objectives, we will put MKUH amongst the top 10% of digitally mature healthcare organisations in the world.

TheMKWay
CARE. COMMUNICATE.
COLLABORATE. CONTRIBUTE.

Our Vision

Our Values
We SUPPORT
We LEARN
We EXPLORE
We CREATE

Our Purpose
Our People   Our Environment   Our Patients

Design Principles
Person Centred   Innovative   Scalable   Accessible   Smart   Safe

6 Digital Initiatives

Digital Priorities

Digital Values

Our people, our values

At MKUH, we are proud of our people, our values, and the standards of high-quality clinical care we deliver to our patients every day.

To ensure our digital development reflects these values, we have established four digital behaviours that we pledge to uphold throughout the next four years of digital development.

We COLLABORATE

We are **#TeamMKUH**. We work together and with GPs, primary care, community care, social care and mental health providers and other hospitals to deliver great care and services for people in Milton Keynes, Buckinghamshire and beyond.

We EXPLORE

We bring the best minds together from all over our care system and work together to better understand each other's digital goals and objectives.

We CARE

We deliver safe, effective and high quality care for every patient. We treat everyone who uses our services, and their families, friends and carers, with dignity, respect and compassion; and we treat each other as we would wish to be treated ourselves.

We SUPPORT

We look for better ways of working and embrace digital concepts that support our staff in delivering excellent care to our patients.

We CONTRIBUTE

We develop goals and objectives in support of the hospital's vision and strategy. We are willing to join in and play our part to make our hospital the best it can be. We acknowledge and share good practice so that others can learn what works well and why, and we learn from others so that we keep improving the care and services we provide.

We LEARN

We listen, and recognise where we can do better, using data as a tool to guide and improve ourselves as well as our digital processes.

We COMMUNICATE

We say **#hellomynameis**; we keep patients informed about and involved and engaged in their treatment and care; and each other informed about what's happening in the hospital. We know we can speak up to make sure our hospital is safe and our patients are well cared for.

We CREATE

We build agile environments that can rapidly evolve to fit our workforces' goals in parallel to our Patients' health and care needs.

Giving meaning to the work we do

Providing High Quality Clinical Care

Purpose is central to our success. In the face of not knowing what each day will bring, and alongside the overwhelming workload we encounter every day, purpose gives meaning to the work we do, irrespective of the challenges we face.

Being able to provide high quality clinical care is that purpose. Our digital strategy recognises this and acknowledges the need for digital to support our workforce in fulfilling the human aspect of our jobs.

Over the next four years our digital commitments will align to this ambition, with digital processes seamlessly supporting improved models of care.

Pioneering Development through User Research and Digital Piloting

We want to work closely with our staff and the wider healthcare system to research into how our patients can get more actively involved in their health and wellbeing. We will continue to develop this through the joining of information from across our care systems so that patients can be presented with a real time, reassuring view of their clinical pathways. During digital development we will ensure that national mandates and technology standards (as described in the Digital Technology Assessment Criteria (DTAC)) are maintained to ensure data is interoperable, accessible, and safely governed.

Alongside this, and in-line with the NHS Long Term Plan, we want to pilot more digital first options for patients alongside conventional pathways, with clear hassle-free access across both channels. We recognise that some patients will choose not to use some of the technology we implement and will be mindful of the impact this can have when transforming digital process across our Trust. Over the next four years this will particularly apply to the transformation of our outpatient and maternity services, where face-to-face appointments will be blended with remote consultations where possible.

A key enabler to supporting faster, digital access to care, will be through the development of our patient portal. The portal will provide a clear timeline of care, starting at home and moving through our pathways and back out into the community, with options to personalise care where possible. Within the portal, patients will be presented with insights into their care plans, drawing attention to any progress made as well as the positive outcomes that await once their treatment is finished. We will take advantage of protocols such as FHIR (Fast Healthcare Interoperability Resources) to ensure our applications align to other solutions developed by wider healthcare providers, system vendors and standards bodies.

Supporting our Workforce's Health, Wellbeing, Education and Training

In parallel to supporting and developing access to care, we want to create a digital environment that is simple to access and that doesn't hold our people back from delivering high quality care. And in alignment with our priority to support our workforce health, wellbeing, education, and training, we want to provide digital tools that know who you are and what you need, providing safe, uncomplicated access to local systems, as well as the wider healthcare ecosystem.

We appreciate that changes to our digital services can be daunting, and pledge to improve staff training and support throughout our journey ahead. To safeguard our vision, we will frequently check in with our digital users to ensure we're getting things right.

User story workshops will bring the best minds together and allow us to collaboratively discuss everyday problems and frustrations in an open forum.

This will build trust and understanding across multi-disciplinary teams, as everyone is made aware of each other's user goals. Furthermore, through the discovery of connected stories or "themes", our staff are given a stake in digital innovation, encouraging healthy engagement throughout projects and programmes of immense change.

Creating a Healthy Environment in Modern Facilities

Our buildings are a necessary component to caregiving across many of the services we provide to our local communities. The built environment is defined as "the human-made space in which people live, work and recreate on a day-to-day basis" and therefore has a direct effect on delivering high quality care to our patients.
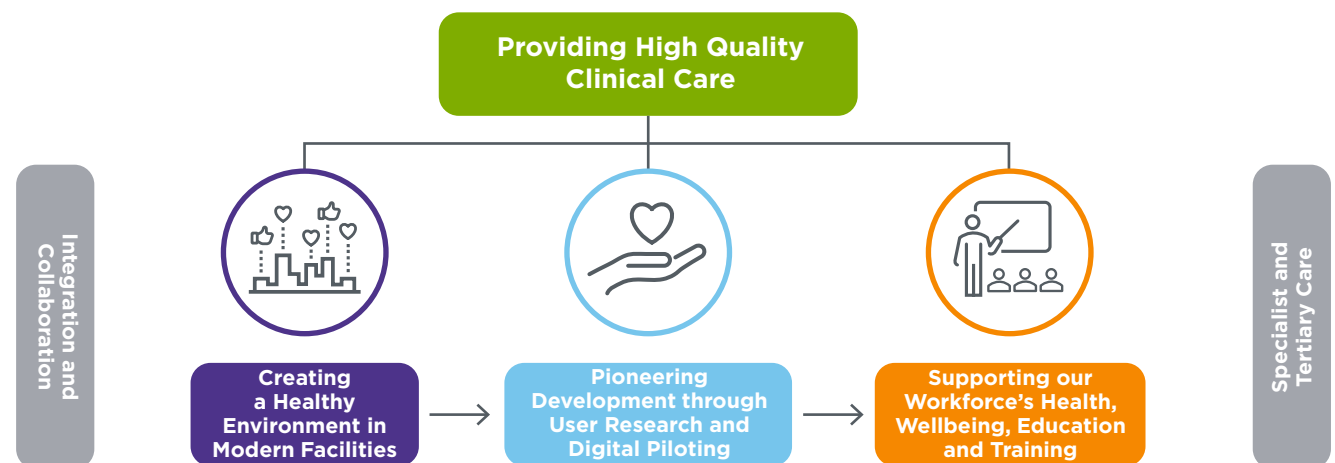
Within our built environment, we interact with digital technology more than ever before, and each day we encounter and interact with multiple digital tools regardless of our choosing to or not. The technology we interact with has the potential to disrupt our daily routines in both positive and negative ways, and over the next four years we want to focus on getting the balance right so that our digital environment supports healthy outcomes for all users of our hospital.

We want our buildings to be modern hubs that promote a healthy, calm, and secure setting for getting better and that do not bring the noise of day-to-day life into the care environment.

Our digital tools will enable all users of our hospital to control how they interact with our buildings; with advanced wayfinding from home into hospital, to controlling heat, light, and noise levels to make people feel safe, secure, and calm during their stay.

To measure how our built environment is performing, we will use data from the systems we design to measure noise, pollution, and user satisfaction levels across all services and act if our environment falls short in any way.

Providing High Quality Clinical Care

Integration and Collaboration

Creating a Healthy Environment in Modern Facilities → Pioneering Development through User Research and Digital Piloting → Supporting our Workforce's Health, Wellbeing, Education and Training

Specialist and Tertiary Care

Design Principles

A smarter healthcare environment

Our approach to building a smarter healthcare environment should enable us to adopt new technology and processes at a pace while remaining focused on our user's needs. To do this we have developed six core design principles that will keep our digital development focused on the outcomes expected by our patients.

Person Centred

Designed around patient and staff user goals

Accessible

Ethical and fair supporting all who use our digital products

Committed to Innovation

Balancing the status quo with thinking outside of our traditional processes

Smart

Data driven, intuitive and intelligent

Scalable and Adaptable to Change

Building digital products that embrace change

Safe

Secure and well governed

Digital Initiatives
Growing and evolving services

Our six high level programmes of work. Articulating how our implementation plan is structured and how it aligns to our purpose and digital vision...

1. Building Scalable, Agile Solutions

Our products and services cannot sit still. They need to grow and evolve alongside our patient's health and care needs.

Within the next four years, we will work to replace all outdated infrastructure and align it with our public cloud. In doing so, we hope to build a solid digital foundation that allows products to be safely scaled to support the latest technology.

Cybercrime is increasing in parallel with technological advances, and in order to protect ourselves against attacks, we will be heavily investing in cyber security tools across our digital platforms.

Furthermore, we will validate safe practices with internationally recognised cyber security accreditations each year.

2. Developing Unified Communications

Throughout the next four years we want to make communication easier.

Our patients and staff use a multitude of tools to communicate with one another, and we know this sometimes makes for a frustrating experience.

Communication tools need to support faster decision making, and free up valuable time to focus on our patient's healthcare needs.

We want to see mobile devices freeing our staff from bulky workstations to enable agile working across both our hospital and wider community settings; and communication systems that give patients better control over the conversations they have with staff.

Furthermore, communication tools should join with eCARE records to direct clinical tasks to the right person, and where possible, safely reassign tasks when a member of staff is busy.

3. Improving Clinical Workflows

We're proud of how far we've come since implementing electronic patient records, but we know we still have a long way to go before we remove all paper processes from our clinical pathways.

The digital workflows that exist within eCARE cannot become stagnated and prevent us from transforming our models of care; and over the next four years our eCARE development programme will continue to support you in delivering safer, faster, and smarter care to our patients.

4. Building Data Centric Teams

We know how important data can be in providing insights into how our services are performing. Data can also teach us a thing or two we didn't know; but it's important to remember that data can be viewed multidimensionally and will look different depending on the lens applied.

We don't want to miss any opportunities to discover insights within the data we hold, and so, we will be working towards providing advanced data discovery dashboards, that enable all staff to analyse information regardless of their skills or technical knowledge.

We also recognise the importance of sharing data outside of the walls of our hospital, so that it can support the curation of longitudinal data-sets and contribute to the development of patient portals that support better access to care.

As our digital portfolio evolves, we will work to ingest more data into our centralised data lake, where it will be applied to machine leaning and robotic process automation, (RPA) tools. Additionally, as medical science advances, we want to contribute to exciting discoveries that could be hiding within genomic and imaging information, by linking with wider clinical research initiatives throughout the UK and applying AI and machine learning to system wide big data.

5. Smart Medical Machines

We've worked hard to connect the devices that are a lifeline to our patients cohesively with their medical record, and this will continue to develop as part of our eCARE programme.

Over the next four years we want to go one step further; using historic and real-time data from devices to contribute towards more efficient processing of information; with machine learning technology mimicking human decision-making, ability, and behaviour.

The data we collect daily will be put to good use, with chat bots utilising information to safely direct our patients to appropriate pathways, faster than ever before.

We also know that medical machines are getting smaller, and this presents an opportunity to expand the footprint of care by remotely monitoring patients from home as well as from hospital. We want to investigate the benefits of linking wearable devices with medical records to support the transformation of some models of care.

Robotic technology is also evolving and has already played a significant part in transforming surgical procedures at the Trust. Throughout the next four years we hope to introduce more robots across all services at the hospital, especially those that can carry out tasks autonomously.

6. Controlling the Built Environment

Our hospital estate is ageing, and this sometimes makes for a less than ideal experience, whether you're a patient, visitor, or member of staff. Actions such as switching on a light or controlling the temperature withing a local area often involves a change across a wider setting.

We want to give the users of our hospital more power over how our building behaves, with digital room controls allowing inpatients to personalise their care environment to improve comfort and control during their stay.

Furthermore, interactive building models will be joined to environmental sensors to support advanced wayfinding for visitors.

Digitising the built environment not only makes for a more enjoyable patient experience, it also enables our organisation to monitor how our building is performing, with data insights translating into actions that support efficient backlog maintenance and proactive planning to minimise our carbon footprint.