



DIGITAL DIRECTIONS
Digital and Data Strategy
2021-2026

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Foreword



“We intend to capitalise on the progress that we have made on our digital journey during this challenging year, to a future which is digitally-facilitated and mature.”

DR SUSAN GILBY
CHIEF EXECUTIVE OFFICER

We are on a journey to becoming a more digitally enabled healthcare organisation. Innovation and technology are radically reshaping our health and care services.

The NHS is experiencing a technological revolution in clinical practice, diagnostics and care. The democratisation of information and sustained advances in technology are raising public expectations of NHS and other public services. Developments in technology are opening up possibilities for new ways to configure health and care services.

The onset of the Sars-CoV-2 pandemic early in 2020 triggered a more rapid uptake of digital tools to support home working and to continue to provide diagnostic and consultation services for patients through virtual clinics. Through the adoption of technology, the level of services provided to outpatients has been much improved and maintained throughout the challenges of infection prevention controlled clinical environments. Also, the productivity of staff working from home has demonstrated the art of the possible for an extended workforce that is no longer bound by office spaces, and ensures the optimisation of Trust estate for clinical use.

The hospital is progressing with the implementation of the new electronic patient record management system, with inbuilt model hospital processes. This critical system will help the Trust to automate data capture on patients, tracking their progress through our care to the point of discharge and release or handover to partner care organisations. It will also enhance our maturity in digital ways of working.

We have invested in digital leadership at Board level to ensure that we maximise the opportunities for innovation through the application of technology. We intend to capitalise on the progress that we have made on our digital journey during this challenging year, to a future which is digitally-facilitated and mature. Digital Directions reflects the Board's commitment is to provide high quality healthcare services modernised through investment in digitising the Trust.

Executive summary

Vision

Digital Directions describes how our Trust will develop and deliver its digital and data services over the next five years to meet the challenges and opportunities posed in the Trust's Corporate Strategies¹ and NHS Long Term Plan² that describes a fundamentally changed health care offer.

The vision of this strategy is: to be a digitally mature health organisation that works with partners to support the wellbeing of the local community through intelligent decision making and clinical innovation.

The intention is to aim for a hospital that is digitally-facilitated with a focus on same-day care and a reconfiguration of discharge once inpatient care is clinically optimised as per the Trust's Clinical Strategy. This clinical ambition is set within a system approach to health outcomes which involves our local partners working within a context of place in West Cheshire.

The strategy sets out how the Trust will develop its plans for digitisation and innovation, working in the context of place in Cheshire West and the Cheshire and Merseyside region. Integrated care, flexible modes of working and supporting a population with a preference for home-based care guides the need for technology that will support this way of working. This will mean aligning investment in technology so that value

for money is gained through Trust technical architecture as well as taking advantage of collaboration at scale at local, regional and national level.

The strategy highlights the strategic importance of developing data and information as a critical asset, the necessary technology to maintain this asset and how we will develop and support our people so that they can engage with the innovation and reap the benefit.

Digital Directions sets out a vision for digital and data services for the Trust, describing the objectives, proposed workstreams, governance, thematic and investment principles that will turn the vision into a reality over the next 5 years, The strategy addresses the challenge posed in the NHS Long Term Plan, 2019, with secondary care providers in England being fully digitised including clinical and operational processes across all settings, locations and Departments. Digital Directions is an enabler to the Trust's corporate strategy and other underpinning strategies.

Digital Directions sets out the digital and data strategy for the Countess of Chester Hospital Trust over 5 years (2021-26).

It forms a supportive part of the Trust's overarching organisational strategy to: improve the lives of our community and provide excellence in healthcare, through partnership and innovation.

There is rich potential for technology to transform the way in which people are supported to live well and prosper in their community. Increasingly, the widespread use of technology at home has increased expectations that public services will follow suit, utilising innovation to update the ways in which health services are delivered.

The Trust is on a journey to improve and transform its clinical services as set out in the Trust's Clinical Strategy. The digital and data strategy provides a route to robust foundations and potential for innovation in service provision and to support the delivery of an intelligent and digitally enabled service.

The vision of the strategy is: to be a digitally mature health organisation that works with partners to support the wellbeing of the local community through intelligent decision making and clinical innovation.

Our promise is to support Digital people, that is, to support local people to access services in ways that are easy to use and digital by nature. We will work with our partners to ensure that local people and our staff are able to access services that are delivered by digital means but are user friendly to reduce any real or perceived barriers.

Health and Care staff will be supported by quality digital services and training so that they feel comfortable working with technology to deliver health care as part of the wider community of health and care services. Systems will be interoperable to allow data to be shared securely where it supports the care of people. Clinical decisions will be informed by the best intelligence available with data sourced broadly to provide the best information to decision-makers and to support self-care in the community.

“There is rich potential for technology to transform the way in which people are supported to live well and prosper in their community.”

**CARA WILLIAMS
CHIEF DIGITAL
INFORMATION
OFFICER**

Context



The Trust has been committed to a route to digitisation for many years with the early investment in an electronic patient record (EPR) in 1999.

This system is now being replaced with state of the art Cerner Millennium EPR solution in 2021 that will enable the hospital to adopt model practice backed by digitisation of key processes. This transition is supported with funding through the NHSD Global Digital Exemplar Fast Follower programme.

The clinical and operational teams are engaged in the digital agenda and keen to adopt innovation in working practices, to improve productivity and the quality of care that they provide to patients. This strategy underpins both the Trust Strategies which set out the areas of focus for the Trust. This includes a focus on “Getting it Right First Time” and increasing productivity. Investment in digital tracking of patients, bed availability and assets has provided more immediate intelligence with real-time reporting and an ability to provide more focused and efficient services.

The extensive use of business intelligence real-time reporting and monitoring has provided significant benefit to the operational and clinical services within the Trust, It has also provided good quality

reporting at a regional and national level.

The Trust is part of the Cheshire West Integrated Care Partnership (CW ICP) and as part of an initiative to support data sharing across health and care organisations, hosts the Cheshire Care Record. The CCR was ahead of its time and now feeds into a wider regional data sharing system. The system continues to support operational services across Cheshire West as well as East Cheshire who adopted the system in 2016. This history of collaboration is reflected in a continued commitment to partnership working to serve the local community. The CW ICP is the vehicle by which community-focused health and care service will be delivered and so will need to be supported through appropriate investment in locality-wide technical solutions across the ICP. This will evolve as the partnership matures.

The Trust has active involvement in the regional Health and Care partnership, taking advantage of national and regional initiatives such as the software to support virtual clinics and the nationally negotiated licensing for N365

Digital principles

to enable the move to cloud-based platforms. Adoption of these technologies has significantly changed for the better the way in which staff work to maintain operations during the pandemic.

There is strategic alignment of this strategy to the CWICP and C&M HCP Digital Strategies ensuring a complementarity of activity at Trust, local and regional levels.

The Digital Directions vision will be delivered through the following key themes:

- Digital People
- Intelligent Health

- System Innovation
- Safe and Secure
- Digital Foundations

The strategy is underpinned by key principles:

- Digital by Design
- Partnership and "systemness"
- Customer focus
- Continuous Improvement

The strategy is supported by a technical roadmap that describes how the trust's technical architecture will evolve to support the organisation in its journey to providing excellence in healthcare.

Figure 1: Digital and Data Strategy. Themes, principles and technology roadmap



Customer Focus

We will reflect the needs and requirements of our customers in the way in which we design and deliver our digital services, ensuring that digital solutions improve customer experience and outcomes. It will also consider the design implications on technical solutions for people who are excluded from access to digital services either through lack of skills or access to internet services.

It will support a consistent omni-channel approach to service delivery utilising all means of communications including social media, telephone and virtual clinics to make access to services easy and efficient.

Digital by Design

We will be taking an enterprise architecture approach to technical investment, ensuring that all technology investment is considered against the existing architecture within the Trust and the System and in the context of Trust strategy. Decision will be guided by architectural principles around Business, Data, Application, Technical domains³.

Any investment in technology will be based on total cost of ownership from initiation through to decommission, benefits realisation and return

on investment, ensuring the integrity of data throughout the lifespan of the technology.

Partnership and "systemness"

We will work in partnership to achieve the best digital solution to support the Trust and the wider ambitions of public service in supporting health and care services. It is through partnership that we will achieve system-wide impact on the goals for improving health and care for the local community. This will provide an opportunity for innovation across the health and social care eco-system.

Continuous Improvement

We will ensure that informatics improves on a continual basis in line with the Trust's Continuous Improvement Strategy, engaging with staff, customers, system partners and technology partners who identify improvements to understand how technology can support new ways of working. This approach will provide the route for innovation to flourish for the Trust.

Technical roadmap

The technical roadmap is a reflection of the legacy architecture for the applications, infrastructure and devices at the current time and the direction of travel for new technologies.

This will identify technologies that will age, become out of date and be decommissioned as well as new technologies that will emerge. It is a medium term view of technical developments for the Trust.

The technical roadmap will be driven by technical architecture principles and governance that address trends in:

- cyber security assurance
- lifetime cost of supporting

technology and value for money

- reducing complexity of solution design
- supporting golden records for key data
- buy not build technology
- improvement in data quality
- exploitation of innovation in cloud-based services, intelligent automation, IoT⁴.

“Teletracking has revolutionised the way we do things within Facilities and improved patient flow dramatically. We now have data to ensure that we are able to provide adequate resource to meet demand and also to ensure that high priority moves are done expediently.

The Bed Transfer Team has saved thousands of hours which the nursing team have been able to put back into direct patient care. We have also enhanced the cleanliness of the hospital by implementing this dedicated team.”

CLAIR SMITH

“Accessing the Cheshire Care Record means I can practise more safely, especially doing telephone consultations, specifically when prescribing new drugs.”

**YVETTE WHITLEY
CARDIOLOGY
DOCTOR**

“Cheshire Care Record (CCR) is an invaluable resource.

The ability to see what the patient has been prescribed in Primary care means we do not duplicate treatment or try treatments which have previously failed. When a patient develops new issues during treatment we can see in real time what is happening with their care and determine whether the changes are relevant to their hospital based care. The Cheshire Care Record makes care safer and more efficient.”

**DR EVELYN L DAVIES
CONSULTANT IN
DERMATOLOGY**



Digital people

The NHS is facing up to a period of significant change in terms of how it provides access to high quality health and care services, and how it mobilises a workforce that is both capable and adaptable to meet these needs.

This key area is driven by the organisation's ambition of putting our patients, and citizens first, at the heart of the strategy. Through this theme we will deliver a range of digital capability to allow our staff, patients, their carers and the citizens of West Cheshire to interact with the Trust through appropriate, safe and secure digital services.

The digital transformation of health and care service informs how we design and deliver education and advances in technology and educational tools has provided opportunities for virtual simulation and immersive learning.

Trust staff will be supported to use digital first as part of their role, with access to training in key digital systems in their specialist areas so that they adopt ways of working that involve relevant technology. This enables the Trust to achieve the goals of the Clinical Strategy as well as the digital goals set by the NHS Long Term Plan for secondary care to be fully digitised by 2024.

The Trust has long been part of the Skills Development

Network that develops its members in data and technology skills.

Estimates show that 8% of people in the UK are lacking basic digital skills (2018)⁵. A further 12% were estimated to only have limited abilities online. Although there is a pattern of declining numbers of people lacking digital skills, this would indicate that 3,800 people have limited to no digital skills in Cheshire West. To become fully digital, all staff and community members need to be supported to have the means to access services online and to feel comfortable using technology.

In a positive sense, the impact of the pandemic has meant that people have moved faster towards digital adoption through necessity with a surge in patients' uptake of remote health services, including registrations for the NHS App, NHS login and e-prescription services (Nuffield Trust, Aug 2020).

Our promise

We will support the move to increasingly online services, focusing on digital tools and services that make it easy for

people to access information and services to improve their own health. Residents will be able to access online clinics and health records when intervention is required.

We will work with our partners to ensure that all members of the community have access to the health and care services that they need regardless of their personal access to technology.

We will support community working with our partners with a digital, person-centred approach to complex cases.

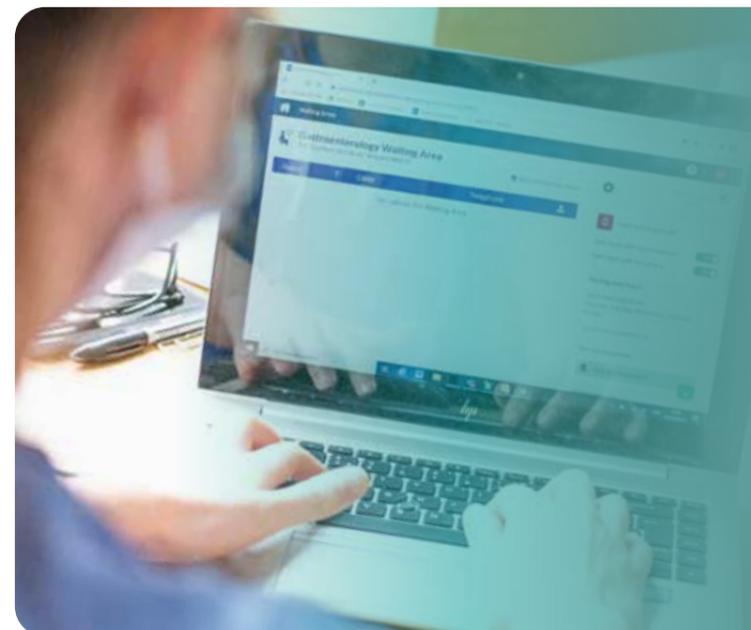
We will manage the change to digital to support everyone involved to achieve better adoption of new ways of working.

We will ensure that anyone

working at the Trust is equipped with the skills and necessary tools to capture and process data in a digital format.

We will evolve our skills and capabilities in data science and clinical digital innovation so that the Trust can benefit from better insight into health service provision and new capabilities including robotics, machine learning and remote monitoring.

We will support clinicians to adopt innovative technology and to assess the clinical impact and safety of innovation.



Digital people workstream

Project	Timeframe
Trust website	2022/23
New target operating model for informatics	2021/22
Digital inclusion	2022/23
Trust intranet	2021/22
Patient portal	2022/23
Virtual clinic capability	2020/21
Online booking services	2021/22
Remote monitoring e.g. diabetic services	2022/23
Digital correspondence	2021/22
Telehealth	2022/23

Intelligent health

Data is a critical asset to the Trust. The Trust needs the capability to marshal and analyse substantial datasets to understand clinical demand, assess potential preventative work, measure performance and manage resources.

Much of the data is personal and sensitive by nature and so mechanisms need to be in place to ensure the safety and security of this data. The Trust can also use the same capability to optimise operations such as the corporate functions e.g. staffing optimisation, procurement, financial transaction processing.

The exponential growth in digitally held data through internet-connected devices and increasing use of digital systems provides an opportunity to analyse the parameters that can impact effective health care. This is within a context of managing personal data in ways that provides additional value, complies with data protection legislation and are ethically sound.

There are evolving roles and disciplines that reflect the burgeoning of data and the growth in sophisticated tools to analyse, model, predict and diagnose. Currently these skillsets sit within the Business Intelligence Team, Information Management and Technology, Information Governance and across the

clinical groups, but there is a need to connect these skilled communities more closely and recognise that a new discipline is evolving with hybrid skills under a Data Science banner.

This will be a new way of working that will make better use and improve the quality of the data and information that local systems and providers have access to improve patient services.

Our promise

We will create a Data Science strategy that sets out the Trust's ambition for a data-driven organisation.

We will work closely with our partners to value data as a public asset to support public health policy and better, customer-based services.

We will engage with the public around the use of personal data to determine the uses of personal data and which uses are acceptable.

We will ensure robust governance of information and data to ensure quality of data, statutory compliance and security of information.

We will invest in and manage data to ensure that wider public use is possible with appropriate data sharing agreements.

We will invest in the necessary infrastructure to enable the sharing of data from the Trust to the wider clinical and care community for policy and operational purposes as well

as Universities for research purposes.

We will support a principle of real time capture and availability of data to enable timely decision-making.

We will ensure that staff are skilled in data management and understand their obligations around personal data.

Intelligent health workstream

Project	Timeframe
Business intelligence implementation	2021/22
Performance dashboard update	2021/22
Data sharing - Cheshire Care Record/CIPHA	2022/23
RTT data cleanse	2021/22
EPR data migration	2021/22
Data science strategy	2022/23
Teletracking review	2022/23



Safe and secure

The security of the patient and other data managed by the Trust is of paramount importance.

Digital Directions will balance the opportunities provided by access to such data to advance or optimise healthcare and hospital operations with the provision of an environment that contains robust governance, appropriate controls on access, specific permission to share for identified uses and cyber security. These arrangements keep personal and other data safe and continue to be reviewed to ensure that information and cyber security is designed into all new technical solutions. The NHS Long Term Plan sets a goal of full achievement of the Cyber Essentials plus standard by 2021. The Trust aims to meet this goal to ensure the security of personal data.

As the Trust becomes increasingly digital, the business continuity and disaster recovery plans will need a radical review to ensure that the Trust is able to optimise recovery from unplanned digital solution downtime.

Our promise

We will assess risk to personal and other data through digital

solution design and ensure that the risks are mitigated and remediated.

We will ensure that the technical architecture is robust and resilient with appropriate backup and recovery arrangements for digital core systems.

We will attain the Cyber Essentials plus accreditation to demonstrate our commitment to high standards in cyber security defence.

We will ensure that staff understand their responsibilities when handling personal data and are cyber threat savvy.

We will develop cyber expertise and capacity within the IM&T team to ensure that technical operations and solution design is informed through cyber security awareness and security by design principles.

We will enforce control of change in the production, train and test environments to reduce risks of failure.

We will ensure that our cyber security processes, policies and systems are independently verified on a regular basis to provide assurance.

Safe and secure workstream

Project	Timeframe
Develop Cyber Security team	2021/22
Achieve Cyber Essentials plus	2022/23
Cyber partnership scale	2023/24
Strengthen cyber infrastructure	2022/23
Staff training at 95% on data security	2021/22



System innovation

System innovation refers not only to innovative activity within the Trust but within the context of partnership working at local, regional and national levels.

This “systemness” is embedded within the way in which we work affecting the way in which problems are viewed and solutions found. It reflects in inter-related nature of organisations working in and around health and care and the perspective that a person with an interest in health needs an easy route to accessing support without having to understand the boundaries between healthcare organisations. Systemness, or the ability to provide a consistent experience for patients and employees, regardless of care setting across the continuum, has become a priority for many. Systemness can improve patient experience, lower costs, reduce risk, and provide insights into a wide range of care and management issues.

Innovation taps into the art of the possible with new technologies as they create the potential, sometimes disruptive, to do things differently for better outcomes. The potential of developments in artificial intelligence, genomics, robotics, virtual reality to the operation of the Trust is significant.

This is a dazzling world of potential that will fundamentally change the course of healthcare. The way in which the Trust engages in this opportunity is guided through ethical, financial, value-based and architectural design governance.

The implementation of first phase electronic patient record (EPR) management system in 2021 will set a course for consolidation of the patient record and a move away from paper-based records. This will transform clinical processes to ones of a model hospital. The ambition is to embed the new system into hospital processes to improve the outcomes for people.

Our promise

We will provide governance to assess the relative impact of innovative ideas with a digital underpinning to balance the risk and reward of pursuing an idea for improvement.

We will provide opportunities for staff to keep up to date with new developments so that innovation is part of our culture.

We will ensure that solution design incorporates innovation

sourced at national, regional and local level as well as the Trust’s existing investment in architecture.

We will ensure that innovation brings a clear benefit to the organisation balancing short

term benefit with longer term foundational change.

We will take a continuous improvement approach to digital investment by trialling innovation at small scale before wider rollout.

System innovation workstream

Project	Timeframe
EPR implementation and optimisation	
- Phase 1	2021/22
- Phase 2	2022/23
- Phase 3	2023/24
Convergence of clinical record	2021/22
Finance and procurement system upgrade optimisation	2024/25
Pharmacy robot upgrade	2021/22
Radiology - regional project	2021/22
CCR and CIPHA	2022/23
Pathology Laboratory Imaging Management System	2022/23
Innovation Hub and Testing Lab	2022/23
Data storage consolidation	2022/23



Digital foundations

A key theme in the strategy is looking at how digital quality improvement and investment in the basic digital foundations will revolutionise and improve the quality of care we offer our patients, taking into consideration the needs of everyone involved in the care around an individual.

It will strengthen our existing infrastructure to provide firm foundations for the broader digital ambition and comply with mandated cyber security standards.

Staff will be empowered by access to digital tools, information and services, transforming their experience of healthcare service provision.

These digital foundations will provide secure, resilient and robust technical architecture that builds confidence in digital ways of working and provides an opportunity for further innovation and digital maturity.

Our promise

We will provide the best customer service to the Trust staff in terms of IM&T support and project delivery.

We will aspire to greater digital maturity as an organisation ensuring the firm foundations in technical architecture to support digital ambitions. We will adopt standard industry practice to improve our digital maturity including accreditation rating through HiMMS⁶.

We will ensure that every member of staff has a user profile that is associated with the appropriate access to equipment and systems that enable them to perform to their best. This includes the ability to work any time, any place anywhere.

We will work with our partners to ensure that digital developments support multi-agency working and the tools to enable safe sharing of data in support of better health outcomes.

We will support continuous improvement in the business through agile practice in solution delivery or where necessary more formal project management for large scale transformation.

We will develop the solution delivery capability through business analysis and formal project and programme management.

We will develop an approach to analysis and solution delivery that assesses the return on investment on technology and complements

the existing investment in technical architecture.

We will build an architecture based on business need for

secure, robust and resilient data centres and high availability and capacity networks.

Digital foundations workstream

Project	Timeframe
Informatica Target Operating Model - Phase 1	2020/21
End user device strategy	2021/22
HiMSS Accreditation	2021/22
Digital Service Catalogue	2021/22
Improving quality of data records and reporting e.g. Referral to Treatment	2020/21
Finance and procurement system upgrade optimisation and business care	2022/23
N365 upgrade and use of Teams/Town Hall	2020/21
Network upgrade - Wifi LAN, WAN - exploring potential of partnership at scale	2021/22
Mobile and flexible working	2020/21
Remote access upgrade	2021/22
Multi-disciplinary Team connectivity	2021/22



Investment principles

In order to maintain value for money for the Trust and safe operation of digital solutions, the following principles apply to investment in digital solutions:

1. All digital investment should be driven by business and clinical requirements and risk assessment.
2. Investment in technology is an investment in data as an asset where the aim is to develop golden records to national standards.
3. Investment should be based upon digital architecture principles to ensure value for money in technical investment and built-in cyber security and disaster recovery capability based on risk profiles and appetite.
4. Investment in technical architecture should be based on lifetime costs in order to maintain sustainability in technical architecture and business resilience throughout the solution's lifetime and to ensure appropriate levels of upfront and ongoing budgeting
5. Investment will be aligned with corporate and digital strategies
6. Benefits realisation will be pro-actively tracked to ensure that initial business cases demonstrate the return on investment.
7. All new investment in innovation with technology will be supported by the appropriate level of project management and handover in to service operation to manage risk through change.
8. Innovation will be prioritised by appropriate governance to ensure that all clinical and operational perspectives are considered before approving the business case and project start.
9. The resourcing model for implementation, system support and maintenance will be sized and funded as part of the introduction of new systems.
10. Investments and sequencing of digital projects will be managed through Trust governance involving clinical, operational and technical expertise.

Governance

The digital developments within the trust are managed within Transformation and Programme governance, reporting into the Trust Board.

This strategy is reviewed on an annual basis as a minimum as part of the business cycle and as necessary when strategic opportunities arise.

This is within a context of the national NHS Long Term Plan (2020), the Digit@ll Strategy that sets the ambition for the Cheshire and Merseyside

Health and Care Partnership and the evolving strategy for the Cheshire West integrated Care Partnership.

These strategies interlink in terms of those investments in digital initiatives that are best delivered at national, regional and local levels.



References

1. The Trust Clinical Strategy was agreed in 2019, the Corporate and People Strategies are being reviewed and are being shaped for approval in 2021.
2. NHS Long Term Plan (Jan 2019) – www.longtermplan.nhs.uk
3. TOGAF (The Open Group Architecture Forum) domains
4. Internet of things
5. <https://www.ons.gov.uk/peoplepopulationandcommunity/householdcharacteristics/homeinternetandsocialmediausage/articles/exploringtheuksdigitaldivide/2019-03-04>
6. HiMSS – Healthcare Information and Management Systems - <https://www.himss.org/>

Reading List

Clinical Strategy - 2019-24, Countess of Chester NHS Foundation Trust, 2019.

Continuous Improvement Strategy, Countess of Chester Hospital NHS Foundation Trust, Jan 2021.

Corporate Strategy, Countess of Chester Hospital NHS Foundation Trust, Jan 2021.

Digit@ll Strategy, Cheshire and Merseyside Health and Care Partnership, 2018.

Enhancing education, clinical practice and staff wellbeing. A national vision for the role of simulation and immersive learning technologies in health and care Technology Enhanced Learning (TEL), Health Education England, Nov 2020.

NHS Long Term Plan, NHS, Jan 2020.

People Strategy 2021-2025, Countess of Chester Hospital NHS Foundation Trust, Jan 2021.

Technology Plan for Health and Care, NHSX, 2020.

The impact of Covid-19 on the use of digital technology in the NHS, Nuffield, Hutchings, R., Nuffield Trust Briefing, August 2020.

We Are the NHS. NHS People Plan 2020-21: Action for Us All, NHS, July 2020.