DIGITAL EXCELLENCE at the heart of **5 star patient care**

Informatics Strategy

November 2020 to October 2023

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1.   Forward and Introduction

I am pleased to present the Informatics strategy for our Trust for the next 3 years.

Since the previous strategy, it has been a challenging time for the NHS financially and operationally. Despite these constraints, I can report that Informatics has made remarkable progress over the last 3 years. Everything we said we would achieve was achieved.

Through hospital investment, we have delivered a safe and sustainable IT foundation. We have overhauled the hospitals' underpinning infrastructure and computer estate and deployed the Careflow EPR and key systems like ePMA and Telehealth safely. We have delivered this at pace and agilely.

Our vision for the next 3 years is clear. We will complete the Digital Aspirant Programme (DAP) assisted by £6m central funding and achieve HIMSS Level 5 or above (the international measurement of digital maturity). We will continue to ensure that the foundations are sound by providing safe, secure, capable and resilient networks, servers, devices, desktops and systems.

The DAP will transform the experience of clinicians and patients and will enable the hospital to achieve digital excellence that matches the Trust's "5-Star Patient Care". This programme, along with our other strategic goals, are key enablers for safer patient care and more efficient services.

Christine Walters
Director of Informatics

I have been Chief Clinical Information Officer (CCIO) at the Trust for just over a year and have seen first-hand what can be achieved through digital investment in good technology to transform the lives of Clinicians and improve patient outcomes.

The DAP presents an exciting and challenging opportunity to add further real clinical value to the strong foundation we have put in place over the last 3 years. Over the next 3 years we will witness a further sea change within our working lives and the way we will harness technology to treat and communicate with our patients.

Careflow EPR will be the single system we use to access and record all of our patients' information: rendering the red medical records folders, the patient folders at the end of patients' beds and handwritten patient whiteboards obsolete. This will release time to care for patients, improve the quality of information, and reduce duplication.

During my first year, we needed to respond to the COVID-19 pandemic, and Informatics and Clinicians responded with agility and collaboratively to the challenges in keeping our hospital, staff and patients safe.

I have utmost confidence that the planned new technology will bring about a successful transformation, and I invite you, my colleagues, to embrace this journey with me, knowing ultimately, it is our patients who will benefit most.

Andrew Hill
Chief Clinical Information Officer

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Introduction by Rowan Pritchard-Jones
Medical Director
Consultant Surgeon in Burns and Plastics

In 2019, St Helens & Knowsley Teaching Hospitals NHS Trust achieved "Outstanding" ratings from the Care Quality Commission, at both St Helens and Whiston.

Informatics continues to make a significant contribution to this outstanding reputation by focusing on systems, and providing a safe and reliable infrastructure, that underpins our Trust 5 star care philosophy. Careflow EPR aligns fully with the Trust themes of care, systems, communication, systems and pathways and with the digital goals of the C&M Health& Care Partnership.

The deployment of the Careflow EPR in 2018 was the largest and quickest implementation of a system of this size in the UK. Careflow EPR was a significant stepping stone to having functionally rich, salient clinical information at our fingertips. Since go live, we added clinical Careflow EPR functionality incrementally to give our patients the best outcome possible: such as CTG Monitoring Vitals, eHandover and Nursing Assessments. In addition, other key systems which improve the patient outcomes and experiences such as ePMA and Telehealth were rolled out at pace, and fully integrated with Careflow EPR..

Careflow EPR has already made a huge difference to the experience of both clinicians and patients. Clinicians are eagerly awaiting further Careflow EPR functionality that is being introduced under the term of this strategy. It will transform the way we give the 5 star patient care we are so proud of:

- I will be able to sign into a single clinical workspace which presents all the patient information I need to record and review under a single login.

- I will only have to enter data once into the Careflow EPR through structured data entry and can enter information using my voice if I wish to.

- As I enter data along the patient's pathway, I can refer to best practice advice should I need it and I can collaborate interactively with my colleagues.

- I am alerted to act promptly if the patient's condition worsens.

- I will have a range of mobile devices and a modern desktop which I can use in line with Trust policy and affordability.

- My need to refer to paper will be reduced to a bare minimum.

- I will have collaborative tools at my fingertips to enable me to share the care of the patient with other healthcare providers and to standardise on the care I provide in line with best practice.

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- I can use Careflow EPR and other IT tools, safe in the knowledge that the underlying IT infrastructure is fit, safe, secure and reliable due to the capital investments the Trust has made under the hardware refresh and capital investment programme.

- I can continue to work efficiently with my team even when I am not on site by using video-conferencing.

The way patients can communicate with the Trust, and the experience they have will be equally transformed:

- Visits they need to make to the hospital are minimised, as they can have outpatient appointments via video when they wish to do so.

- They can ring 111 prior to attending ED to check whether they should attend at all.

- They have access to Wi-Fi whilst at the hospitals, and in hospital, so they do not need to feel isolated or bored.

- When they do attend hospital, they are kept safe with the social distancing measures in place and technological advancements that have been made to minimise their risk of infection such as a drive through pharmacy, electronic outpatient prescriptions and so on.

- They receive two way texts regarding their appointments to ensure they are reminded and are more likely to attend.

- They will have more face to face time with clinicians as the Careflow EPR will release time to care.

- They will not be asked to repeat information they have already given.

- Their caregiver will be aware of and provide care in line with any long terms conditions they have.

- They will have access to a patient portal to access our services: view appointments and letters, cancel and rebook appointments, collaborate with their consultant on their health conditions to avoid unnecessary admissions and visits.

- Technologically-disadvantaged patients will still be able to access our services as they do now.

- Patients stay in hospital will be as short as possible, as the wards will have better collaborative discharge planning tools in place to ensure they are returned home as soon as they are fit.

The Informatics Strategy for the next 3 years is an exciting and transformational vision of the way we want to use technology and is fully aligned to the Trust's objectives and reputation, and to the wider digital aims of the NHS.

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The Informatics Strategy 2020 to 2023 describes Informatics' vision for St Helens & Knowsley Teaching Hospitals NHS Trust, the patients it cares for and its staff.

It describes how Informatics will deliver digital excellence as an enabler for the challenges the hospital faces in delivering the next steps of the 5 Year Forward View, (5YFV) and NHS 10 Year Plan.

Central to this strategy is an undertaking to successfully deliver the Digital Aspirant Programme (DAP), supported by £6m central funding. This financial assistance was awarded based on the Trust's capacity and capability to undergo transformation assisted by technology at pace and safely. This has been demonstrated over the last 3 years by our initial deployment of the Careflow EPR and the addition of rich clinical functionality.

The previous strategy term saw the Trust demonstrate a significant improvement in its digital maturity. Our last submission to NHS Digital saw that we had accelerated from the 178th to the 19th placed Trust in England. Significant additional functionality and digitisation has been added since the last submission.

We have used available investment to upskill the Informatics workforce and deliver a solid infrastructure foundation that is modern, capable, safe, reliable and available 24/7.

The DAP will ensure that the Trust has the digital maturity of a word-class hospital by achieving HIMSS Level 5 or greater by 2023.

We will continue to develop and strengthen our foundations to deliver an affordable, digitally-excellent infrastructure, desktops and devices.

This strategy also describes the improved technology that Informatics will introduce to continue to improve the health and wellbeing of the local population by collaborating to provide an accountable care system with our partners in the Cheshire and Mersey Health & Care Partnership and wider. We have led the way with St Helens Cares in providing place-based care and will extend this success as we start to see the preventative benefits of having population health management in place.

New technology will empower our patients, their families and their carers. They can become more involved in their own care, communicate with us differently and avoid the need for hospitalisation when possible. No patients will be digitally-excluded from our services.

Challenges such as the recent pandemic, have demonstrated just how agile and responsive Informatics can be and how the creative use of technology can find solutions to pressing issues for the Trust, working in partnership with the Careflow EPR vendor and other system vendors to find those solutions.

We will continue to respond with agility, in line with Trust objectives, to overcome

specific problems and respond to changes in priorities, but never lose sight of the main goals of digitising the hospital and providing digital excellence at the heart of 5 star patient care. This is perhaps demonstrated best by the outcomes we expect for our patients, clinicians and the Trust.

2.1 Outcomes for Patients

- Improvements in efficiency and quality of care by clinicians having access to real-time, tailored information under a single Careflow EPR login, resulting in more face to face time with clinicians.

- Safer care due to the systems in place for monitoring their condition and prompting rapid action and best practice if their condition deteriorates.

- Less time spent in hospital by having improved patient flow from admission to discharge and better collaborative discharge planning.

- When admitted, the patient will be allocated the right bed, first time.

- More appropriate attendance at ED due to alternative means of receiving care via 111 and Urgent Treatment Centres.

- Improved and safer outpatient visits where social distancing is maintained and infection risk is minimised.

- Better patient choice and improved communications enabled by digital technology such as a web-portal, two-way texting and Telehealth.

- More effective joined-up care with sharing of patient information across care providers.

- Safe management of their personal data through compliance with Information Governance standards.

- Reduction in the health economy carbon footprint, through reduction in travel, paper etc.

- More investment in their own health and wellbeing by having access to technology, such as best practice apps, which assists with self-management (or management by family and carers) of long term conditions.

- Digital sharing of their data with care providers which ultimately avoids unnecessary hospital visits.

- Full inclusion in hospital services regardless of their own access to technology

- Ability to opt out and use traditional methods of communication if preferred.

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2.2 Outcomes for Clinicians

- Increased productivity with less time spent searching for records as the hospital becomes fully digitised.

- Enter data once only in fully-digitised patient pathways.

- Fast, secure access to patient information, in any location, from a single EPR login.

- Decision support and alerting, with access to online best practice, resulting in the best outcomes for patients.

- Consolidated view of patient flow across from ED to discharge ensuring the patient ends up in the right bed, first time.

- Collaboration with multi-disciplinary teams and other care providers to speed up the discharge process and free up beds.

- Improved digital tools for team and cross team working.

- Access to the right mobile device to do their work with an option to use their own device.

- Access to virtual appointments, voice recognition and electronic communications to make care provision more efficient and release time to direct patient care.

- Care planning across multiple care providers, so the patient has more joined-up, accountable care.

- Reduction in duplication and transcription into multiple systems.

- Population health support and access to self-care data to prevent avoidable hospital visits and admissions.

- World-class digital maturity of HIMSS Level 5 or above to match our outstanding rating and 5 star reputation.

- Well governed, positive long term relationships with healthcare partners.

- A well governed and successful track record of IT Programme and Project delivery.

- IT transformation contributing to the Trust's long term financial sustainability.

- A clear and transparent approach to risk management.

- High level of assurance from independent audit reports and the scrutiny of the DAP from NHSX.

- Informatics' Accredited Services with ISO27001, compliance to Cyber Essentials and Service Desk Accreditation.

- A clear and transparent approach to budgetary management and investment strategies.

- A capable, efficient and motivated workforce.

- A fully-digitised hospital.

- Digital enablement to support the NHS 10 year plan.

STAGE	**HIMSS** Analytics® **EMRAM** **EMR Adoption Model Cumulative Capabilities**
7	Complete EMR; External HIE; Data Analytics, Governance, Disaster Recovery, Privacy and Security
6	Technology Enabled Medication, Blood Products, and Human Milk Administration; Risk Reporting; Full CDS
5	Physician documentation using structured templates; Intrusion/Device Protection
4	CPOE with CDS; Nursing and Allied Health Documentation; Basic Business Continuity
3	Nursing and Allied Health Documentation; eMAR; Role-Based Security
2	CDR; Internal Interoperability: Basic Security
1	Ancillaries - Laboratory, Pharmacy, and Radiology/Cardiology information systems; PACS; Digital non-DICOM image management
0	All three ancillaries not installed

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3. Background

3.1 About the Trust

The Trust is a large multi-site Trust with an annual budget of around £411 million, 850 beds and 5,000 whole time equivalent staff.

The Trust provides acute inpatient, outpatient, day case and emergency services to a local population of 350,000 across St Helens, Knowsley, Halton and Liverpool.

This extends to over four million people including the whole of Cheshire, Merseyside, North Wales and the Isle of Man with the Regional Burns and Plastic Surgery Unit located at the Trust.

The Trust is also a major teaching hospital with well-established educational and research relationships with the University of Liverpool and Liverpool John Moores University, and as a Lead Employer, on behalf of the Mersey Deanery, employs over 2,000 trainee hospital speciality doctors.

The Trust also provides pathology services for Southport and Ormskirk Hospital NHS Trust, and was recently selected as the provider of adult out of hours community nursing services for St Helens Clinical Commissioning Group, (CCG), including intermediate care, District Nursing, Treatment Rooms, Phlebotomy and Continence.

The Trust is the lead contractor and is working in partnership with North West Boroughs Healthcare NHS Foundation Trust and St Helens ROTA to combine our expertise to be able to deliver the new service specification.

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3.2   Technology at the Trust

The use of Information Technology, (IT), within the NHS, and at STHK, has accelerated rapidly over the term of the previous strategy and is set to accelerate even more rapidly over the next 3 years. The Trust is fully reliant on its EPR, both operationally and on a day to day basis. IT is seen across the Trust as a key enabler for transformation and sustainability.

IT is provided across the Trust by the Informatics Department, a shared Informatics Service, hosted by the Trust.

The Informatics Service continues to keep pace with advancements in digital technology ensuring staff are capable of embracing and supporting both transformation and business as usual. Informatics has made significant improvements to both the hospital's digital maturity and the safety, reliability and capability of the hospital's underpinning infrastructure since the last strategy and will continue to do so for the next 3 years, at an even faster pace that has been enabled by central funding.

Intrinsic to the work of the Informatics Department in assisting this delivery are the following national policies and directives:

- **The NHS Long Term Plan (January 2019)**

- **NHS England and NHS Improvement funding and resource 2019/20**

- **NHS Rightcare**

- **Next Steps on the Five Year Forward View**

- **Breaking Down Barriers to better health and care (April 2019)**

- **We are the NHS: People Plan for 2020/21 – action for us all**

- **NHS Operational Planning and Contracting Guidance 2020/21 (suspended March 2020 in response to COVID-19 pandemic)**

3.3 Informatics' Achievements

In April 2018, the Trust went live on Careflow EPR which replaced its previous Patient Administration System which had become outdated and no longer supportable or extensible. This implementation was the largest in scope and the fastest implementation in the UK of this solution and was a massive challenge for both the organisation and Informatics.

Careflow EPR is a modern, extensible foundation on which the Trust can build a fully digitised and capable clinical system by adding Careflow modules when they add clinical and operational value, or integrate best of breed 3rd Party systems where no Careflow module is available.

Careflow EPR is now at the heart of the care the hospital provides. Since its implementation, the Trust has significantly improved its digital maturity.

In addition to the initial implementation, the Trust has deployed further Careflow EPR modules, along with a number of other systems, which demonstrate significant IT progress since the last strategy:

ePMA (electronic prescribing and medicines administration). The system was rolled out to replace the use of paper-based prescribing and medicines administrations on inpatient wards and in ED. This has resulted in the removal of illegible prescriptions, 100% availability of the patient's drugs record from multiple locations simultaneously, reduction in allergy and drug interaction never incidents, removal of the need for transcription and rewriting of the prescription chart as the patient moves from location to location, general improved patient safety and clinical decision support.

Vitals This module, which enables the recording of patient observations on hand-held devices at the point of care, was rolled out across all inpatient wards and in ED. NEWS2, the nationally-mandated more sensitive Early Warning System (EWS) was implemented on adult wards and within ED to provide a view of and prompt action for the sickest patients. The MET team can take prompter action should the patient condition deteriorate.

Vitals has been pivotal in ensuring National standards of care are provided, reducing the likelihood of never incidents, avoiding high cost care transfers to ICU, providing better patient outcomes in general but specifically for Sepsis and Cardiac Arrest and helping to reduce Length of Stay.

eHandover using Careflow Connect has been implemented by a number of teams within the hospital to enable structured digital communications that enables clinicians to allocate patient care within their own teams, refer to colleagues in other teams for specialist advice about their patient and hand over patient care to other teams. This

speeds up the patient's journey and provides a clear audit trail of the transfer of patient care from one team to another, for example from ED to General Surgery.

Telehealth was rolled out to all services who requested to use it. This system was particularly helpful during the pandemic to reduce the risks for patients by the prevention of unnecessary visits to the hospital.   A re-usable blueprint for Telehealth has been developed for any service that chooses to implement it.

An enhanced encoder **Simplecode** recently went live which enables a more timely, complete and accurate coding of patient spells. The Coding team can provide better reporting on comorbidity and submit coding activity by the deadline dates.

The Trust's switchboard was replaced with an **Automated Switchboard** which improves and speeds up communications between clinicians, departments, and patients and relatives contacting the hospital.

2-way Text Messaging enables patients to receive reminders about their appointments and confirm their attendance, reducing DNAs by 2%.

St Helens Cares is a solution which is at the heart of leading edge Place-based care. It has been extended to include collaboration with the introduction of multi-agency care plans and business intelligence to facilitate preventative population health management to focus on the needs of the citizens of St Helens.

The Careflow EPR **Cardiotocography (CTG) Monitoring** system was deployed to enable the monitoring of babies' heartbeats within the Maternity suite. This system contributes to better maternity outcomes.

A number of improvements to the hospitals' underpinning infrastructure have been made during the term of the previous strategy. These achievements combine to ensure that the hospital systems are accessible, safe, securable and reliable,

The availability of **Patient Wi-Fi** has improved the quality of experience for patients in hospital. **Govroam** enables visitors from partner organisations access secure Wi-Fi on site.

The replacement of the **Storage Area Network** was essential to ensure that there was sufficient and up to the minute storage available to support the Careflow EPR and other systems.

The **Unified Threat Management System** is essential to ensure that systems and data are safe from external threats and provides tools to enable the Informatics Team to deal with them. The Trust was one of the few Trusts in the UK not to be adversely

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impacted by Wannacry.

Upgrading all Trust desktops to **Windows 10** has ensured that all Trust staff now access a modern, capable desktop to undertake their work. **Office 365** means that all Trust staff can now access their email both on and off the Trust's premises.

Sophos Antivirus ensures viruses do not impact Trust systems. **Advanced Threat Protection** provides a dashboard to monitor and manage potential threats and intrusions before they can do damage.

Telephony was replaced in tandem with the automated switchboard, which ensured that outdated and redundant telephony was retired. **Back Up Systems** were upgraded to ensure that the Trust has seamless failover in the event of an outage.

COVID-19 presented particular problems and challenges that required Informatics to respond with agility by providing solutions to keep patients and clinicians safe and socially distanced during the pandemic.

Skype for Business/Microsoft Teams ensured that teams and colleagues from other external organisations could collaborate virtually from wherever they were located. **Always On VPN** ensures continuous service if accessing the Trust network at home. **Office 365** has enabled users to have access to Trust systems when not using a Trust device at home without impacting on security of the Trust network.

A **Drive Thru Pharmacy** prescription collection service was established to dispense drugs prescribed electronically during an outpatient visit.

External Technology Funding Awards NHSX's Digital Aspirant Programme (DAP) was launched in 2019 to assist NHS Trusts in England who had the foundations, aspirations and capabilities to improve their digital maturity, with central funding to help them achieve their digital aspirations. In 2020, St Helens and Knowsley Teaching Hospitals was fortunate to be awarded with £6m funding spread over the term of this strategy. We are the only Trust in the North West of England to receive such an award.

The Trust was also awarded Health Led System Investment (HSLI) funding to support its NEWS2 implementation and Telehealth Expansion.

This new strategy starts at the early stages of the Trust's Digital Aspirant Programme, where the Trust expects to achieve levels of maturity equivalent to HIMSS Level 5 or above (the worldwide measurement of digital maturity) by November 2023.

3.4 How We Performed

The following table demonstrates how Informatics performed against the roadmap set out in the previous strategy:

Initiative	2017/18	2018/19	2019/20
Electronic Prescribing and Medicines Administration (ePMA) Deployment	✓	✓	✓
Opera Theatre System Deployment	✓		
PAS Replacement Programme	✓	✓	
Clinical EPR Deployment		✓	✓
Clinical Portal Deployment (**Note**)	x		
Service Desk System Replacement	✓		
Patient Wi-Fi		✓	
Electronic Combined Risk Assessment Forms	✓		
Virtual Desktop Assessment and Deployment		✓	
Telehealth for Patient Consultations	✓	✓	✓
App Deployment Platform (used to launch Trust Intranet website)	✓		
Cyber Essentials Accreditation	✓		
Systems Optimisation	✓	✓	✓
Alignment with LDS and LDR Shared Goals	✓	✓	✓
Deliver a shared patient record with local care providers		✓	✓

Note: Clinical Portal requirement was rendered obsolete by the Careflow EPR deployment.

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3.5   Where Are We Now?

Systems continue to be at the heart of the Trust Objectives for 2020-21 and will be for the term of this strategy. Digital systems support changes in pathways of care and are the catalyst to enable clinical best practice and improved patient outcomes.

This Informatics Hospital Strategy supports several related Trust strategies and action plans including:
- **The Nursing and Midwifery Strategy**
- **Human Resources and Workforce Strategy**
- **Clinical Quality Strategy**
- **Patient Experience Strategy**

The Trust's vision for *Integrated Health and Care for Better Outcomes* sets out the transformation of patient care models.

Technology is in use every day in almost every part of people's lives, including healthcare. This strategy describes how we will build on this to provide patients, carers and our colleagues' safe and innovative ways to manage patient care and enable the delivery of the Trust's "5-Star Patient Care" vision.

The Informatics Department provides a shared IT service to many local NHS organisations, as well as the Trust. This presents additional opportunities for local care providers to come together to create ambitious local plans for accelerating the Next Steps on the Five Year Forward View.

The sharing of electronic information and joining up pathways of care across different NHS organisations can transform regional healthcare into a sustainable, future-proof healthcare service, specifically in terms of a number of population based priorities set out in the next steps:

- **Urgent and Emergency Care.**

- **Joining local health care services to prevent hospital visits**

- **Treatment of the over 75s**

- **Efficiency**

- **Strengthening the Workforce**

- **Patient Safety**

- **Utilising new technology**

NHS priorities are reiterated by the goals in this strategy.

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3.6   Accountable Care System

The Trust works with other care providers in the Cheshire and Merseyside Health & Care Partnership to provide an Accountable Care System for the local population following the digital ambitions set out in its roadmap "Digit@ll".

Regardless of the political, economic and social climate within which the hospitals operate, the following local and national objectives for Accountable Care Systems continue to drive priorities for Informatics:

Local and National Objectives for the NHS	
Front door screening	Promoting Self-Care and Wellbeing
Improved Patient Flow	Building Health Partnerships
Joined up services across multiple care providers	Getting best value out of medicines and Pharmacy
Place-based care	Digitising hospitals
Reduce unwarranted variation	Enable 111 to resolve problems
Cut costs of corporate services and administration	Reduce unwarranted variation in clinical quality and efficiency
Meet demand more appropriately	Reduce avoidable demand
Preventative healthcare	Prevent healthcare acquired infections
Urgent Treatment Centres	Maternity safety
Reducing medication error	Patients to access care online
Improve the online appointment booking process for hospitals	Make patient information available to the clinicians wherever they are
Increase the use of apps to help people manage their own health	Innovation for future care improvement
Digital contribution to research	Technology to support NHS priorities

3.7   Informatics' Goals

Above all else this strategy is about improving patient care and outcomes and, in order to fulfil this, we will:

- **Complete the Digital Aspirants Programme (DAP) and fully digitise our hospitals to HIMSS Level 5 or above to match the 5 star care we provide.**

- **Procure digitally-excellent systems under the Careflow EPR, so real-time accurate information is available when needed across all care settings**

- **Enhance the experience for Trust clinicians by providing a single login to Careflow EPR, where data is only entered once on the patient's pathway**

- **Align with the goals of the Cheshire and Merseyside Health & Care Partnership and its digital roadmap (and wider accountable care systems) through partnerships to improve the efficiency in the way healthcare services are improved by digital technology**

- **Collaborate with NHS and other care providers to provide Place based care and preventative population health management**

- **Upgrade and optimise functionality within systems to ensure all possible benefits are being realised and the Trust can demonstrate value for money in its investment in technology**

- **Enhance the infrastructure and systems to enable data sharing, agile working and mobility**

- **Ensure the safety and security of systems through pro-active monitoring of data and systems**

- **Innovate as a progressive Informatics service which keeps abreast of new technologies and provide options to improve the service to our colleagues and patients**

- **Continue to respond agilely to the changing priorities that events like the COVID-19 pandemic and the transformation the NHS requires**

- **Replace departmental systems and orphaned patient data with Careflow EPR functionality wherever possible if meets business requirement.**

- **Continue to deliver sustainable service improvement that demonstrates digital excellence**

4.   Digital Aspirant Programme (DAP)

4.1   The Case for Change

Since the deployment of the Careflow EPR in 2018 the Trust has made giant steps in improving its digital maturity in line with NHS plans to have fully digitised hospitals.

Clinical functionality has been added to enrich the information at the fingertips of our clinicians and the experience for our patients: the outcomes they can expect, their safety whilst in hospital and when communicating with the hospital from their place of residence.

The Trust has demonstrated the quality of the care it gives by its CQC rating of 'Outstanding'. Friends and family, footfall and staff surveys all demonstrate that STHK is the hospital of choice for many patients and has staff who happy and motivated to provide the best possible care.

Over the term of the previous strategy we changed our digital ambitions from having a best of breed EPR to having a clinically-richer single EPR in place.

Whilst we have improved our digital maturity significantly, we have yet to achieve a world-class reputation for digital maturity as demonstrated on the HIMSS scale. In order to achieve a world class digital maturity of HIMSS Level 5 or above, the Trust applied for funding from NHSX to extend the use of its Careflow EPR, in partnership with System C.

The Trust was awarded £6m in February 2020 which has enabled us to embark on a programme of digital transformation to enable us to realise our digital ambitions at a much faster pace.

The Digital Aspirant Programme will ensure that the hospitals can continue to deliver safe and efficient care to patients and achieve clinical and strategic ambitions for digital excellence, whilst aligning with the digital ambitions of our neighbouring health and social care partners.

The change we are about to undertake will be operationally and clinically challenging but will transform the way the hospital provides care and the way in which patients receive it.

Digital Hospital

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4.2 What will the programme deliver?

The DAP Programme comprises a number of initiatives that accumulatively digitise the hospital, enhance the patient's experience, and keep patients safer:

Vitals The rollout of Vitals will be completed across all care settings ensuring continuity of care. Careflow Vitals replaces paper recording of observations and rounding activities, providing consistent and safer monitoring of patients. Significant abnormalities, patients who become clinically unwell or are at increased risk of particular problems can be alerted to clinicians and specialist teams with a 'track and trigger' based approach.

Telehealth The rollout of video appointments to those services that wish to use this method of communicating with their patients. Outpatient services are supported to deliver remote consultations using secure video conferencing, integrated into their clinics so that the right patient receives the right appointment at the right time.

Outpatient Prescribing Following the successful deployment of electronic prescribing across inpatient areas, outpatient areas will now also be transitioned from paper to electronic prescribing. In addition to providing all of the important clinical safety benefits from reducing prescribing errors seen in inpatient prescribing, this will provide a more efficient service to patients and support social distancing in the hospital by avoiding the need for patients to queue at the pharmacy. This will be complimentary to the telehealth service – enabling prescribers who are providing remote clinics to be able to prescribe for a patient for subsequent medication collection.

Patient Flow Handwritten whiteboards on wards will be replaced with a digital presentation of patient information to enable planning and decision making. Accurate digital, real-time information will assist board rounds and ward rounds and improve discharge planning and patient flow to ensure patients are given the right bed, first time.

Patient Communications Improved letters functionality will be implemented which will also enable letters to be sent digitally to patients who prefer to receive their correspondence this way. Two-way text messaging functionality will be rolled out in all outpatient areas. A cancellation function will be added to enable patients to cancel their appointments via a text message. This will result in fewer cancellations, missed attendances and re-arranged appointments.

Patient Portal A web-based portal will enable our patients to access hospital services online. Patients, who choose to, will be able to book and cancel appointments, receive correspondence, undertake appointments with clinicians, access apps which assist them in the self-management of their conditions and

access information about the hospital and their treatment pathway.

The Hospitals' portal will be surfaced via the C&M Health & Care Partnership portal, Amity. Amity will ensure that patients can access services from all care providers through a single front door. A pilot will be started in the next few months to enable patients in St Helens to share data with multiple care providers to assist in self-management of conditions such as Diabetes and Stroke. This will support population health management initiatives.

A more digitally mature hospital will offer safer and more efficient care for all patients. Some of the new systems are intended to be directly accessed by patients. Digitally literate patients will see benefits in terms of improving ease of access to services and to be empowered to take greater ownership and control of their own healthcare. The programme will also ensure that less technologically enabled patients also benefit – from releasing time to care, to building relationships and processes so that everyone has fair and equal access to Trust services.

Digitising Clinical Documentation Several Careflow EPR modules will interact to digitise patient pathways across the Trust and remove paper:

- **Vitals** Nursing assessments will be recorded on mobile devices to replace paper that is stored in the yellow folder at the patient's bedside. Alerting and best practice advice assists nursing and AHP teams to better manage the patient's condition and take prompter action on risk factors such as: Diabetes, Acute Kidney Injury, Indwelling Devices, MUST, Fluid Balance, Dementia and Delirium and so on.

- **Clinical Noting** A development team within Informatics will work with Clinicians to create structured data entry to digitise patient pathways in the Trust including creating a fully **Paperless ED** system. Rather than just replace paper like for like, the team will focus on ensuring legacy duplication is removed and data is only entered once by Clinicians and then available universally.

- **Clinical Narrative** Data capture will be tailored to the best-fit mobile devices for the staff group and the job they are undertaking.

- **Care Plans** will be developed to assist clinicians to manage patients with particular conditions and admission reasons to follow national and local best practice guidelines. Care plans are task-driven and auditable to give assurance that best care is given.

- **Mobile Device Strategy** Informatics will collaborate with Trust Clinicians to identify the best mobile device for the task in hand. This will include the ability for clinicians to use their own device.

eHandover Digital handover and referral of patients within teams and across teams

will continue to be rolled out in all specialities across the Trust. **Tasks and Alerts** will be added to further enrich the clinical experience by enabling teams to manage the tasks required to deliver 5 star patient care. Alerts ensure that clinical actions are prompted real time to teams involved in the patient's care. This step is pivotal in our digital journey and a key priority for the Trust.

Mobile Order Communications and Results Reporting Use of the Careflow EPR Order Communications module to digitally order and check results is widespread across inpatient wards and ED but less so across outpatient service (around 60%). This project ensures that all orders will be placed electronically and all results are reviewed electronically in all care settings for all tests ordered across the hospitals. (For example, Histopathology orders, which are currently ordered on paper, will be placed electronically in the Careflow EPR).

Workspace A single login for clinicians to a workspace will be provided to enable them to view and manage lists of their patients. They will be able to view all the salient information in a tailored view and undertake actions such as complete notes, place orders, action alerts etc.

Clinicians will be able to click through in context to access information held in linked systems such as PACS, EDMS, ePMA and so on. Information held on place-based systems such as St Helens Cares and by other care providers in the Cheshire & Merseyside Health & Care Partnership (and wider) will be accessible.

Voice Recognition Technology to allow the voice entry of data into the Careflow EPR will be provided where it enhances patient care and introduces efficiency.

Discharge Summaries Migrating to the Careflow EPR discharge summary will make completing the discharge process easier for clinicians and improve the quality of discharge summary information shared with GPs and the patient.

4.3   The Wider Context

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The Next Steps of the Five Year View advises that all care providers within the same and across different geographical areas work collaboratively to provide an "Accountable Care System" for the regional population of patients they serve.

Increasingly, hospitals need to do more safely, and with less resource. This means making processes more streamlined. The degrees to which our hospital will be digitised by the end of the strategy, and the way that data and care is shared within the Cheshire & Merseyside Health & Care Partnership, and wider, is pivotal to providing an accountable care system that best serves our citizens and also delivers the efficiencies required by an increasingly challenged NHS.

Careflow EPR is the main tool our Clinicians use and will continue to be developed for at least the next 7 years.

Significant digitisation is needed to ensure that patient information is safe, is not lost, and is available to all, simultaneously from any location. That is what the objective of the Digital Aspirant Programme is all about.

Wherever possible, we will continue to introduce efficiencies and improve patient outcomes by exploiting opportunities for collaboration with other care providers within the Healthcare Partnership and wider.

We will capitalise on the blueprints and developments invested in by other Trusts who have also deployed the Careflow EPR, with a commitment that we will adopt two blueprints developed by the first wave Digital Exemplars and Fast Followers, capitalising on the lessons learned and benefits realised.

Under the Digital Aspirant Programme, we will look to develop two blueprints which can be adopted by other hospitals to assist them in the digitisation of their hospital.

The Trust will be undertaking a number of innovative steps under its digitisation journey. We expect to be first of type on some deliverables such as mobile ordering and results.

The Digital Aspirant Programme will further assist in the realisation of our digital ambitions by providing a functionally-richer Careflow EPR which delivers the best patient outcomes possible and enables care provision that is tailored to the needs of the local population. It will also satisfy many of the steps needed to achieve a single EPR by enabling modules such as Careflow Theatres and ePMA to be added at a later stage, after the Digital Aspirant Programme is completed.

5. How will this enable clinicians to deliver 5 star patient care?

The Digital Aspirant Programme can deliver digital excellence at the point of care. Digitising the hospital under the Careflow EPR is a fundamental enabler for this strategy, contributing significantly to the Trust's *5 star patient care* objectives:

Safety – Careflow EPR and related systems such as ePMA keep the patient safe by providing clinicians with legible digital information that can be accessed by multiple users in multiple locations simultaneously. Enhanced alerts and decision support will enable the clinician to act sooner and in line with best practice, to prevent the patient from deteriorating or coming to harm.

Care – Careflow EPR provides standardisation and consistency in the way 5 star patient care is provided. The digitisation of the hospital processes will enable duplication to be eradicated and provide online access to best practice advice at the point of care.

Task-driven care plans will ensure that the patient is given the best, most appropriate care for their diagnoses, long term conditions and healthcare risk factors.

An auditable view of digital clinical care will help improve the standardisation of patient care across teams, and ensure there is a real time record of when and how care has been delivered.

Systems – The outcome of the Digital Aspirant Programme is to digitise the hospital providing a world-class system, Careflow EPR, that underpins hospital and care provision. The system is fully extensible to continue to add clinical value and efficiency beyond the term of this strategy.

Pathways - The digitisation of care pathways, both internal and external to the hospital, will enable the Trust to re-examine its current use of paper and digitise pathways so information is only entered once and in line with current best practice. This will reduce unwarranted variation and offer opportunities along the pathway for integrated and joint-working on shared pathways with our partner care providers to improve outcomes for population priorities, for instance, Frailty.

Communication - Enhanced communications will be delivered and the Careflow EPR is the key enabler. Improvements such as a patient portal, online consultations and access to self-care apps will transform the experience for our patients, and also drive down costs.

Digital communication between and across teams will enable transfers of care to be auditable and optimised to the benefit of the clinician and the patient. Task management and alerting will also enable clinicians to better manage their time and handover the care of patients to their colleagues efficiently and safely.

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6.   Other Informatics' Projects

A number of other key technology projects will be undertaken during the course of this strategy, including:

We will procure and deploy a system which best supports the patient care the hospital provides in its **Urgent Care Treatment Centres**. We will also procure and deploy a system fully integrated with the Careflow EPR, which allows Trust **Community Staff** to work more efficiently.

Communications in Theatres   A pilot is underway which enables Clinicians in Theatres to communicate using a "Smart badge" which avoids them having to remove PPE or scrubs in order to take or initiate a telephone conversation. If successful, we will roll this out to other areas.

Ongoing System Replacements When departmental systems become end of life over the term of this strategy they will be replaced by Careflow EPR functionality where it provides functionality capable of meeting the business requirements.

Videoconferencing will be provided in Trust meeting rooms to allow Trust teams and colleagues to meet virtually. **Cloud Video Interoperability** will enable virtual meetings with other care providers thus avoiding unnecessary travel.

Remove Orphaned Department Databases Stand-alone departmental systems within the Trust, where patient data is orphaned, will be replaced by Careflow EPR.

EDU Roam Wi-Fi will be provided to students and placement workers at the hospital using an educational network.

System Upgrades Trust systems will be upgraded to ensure that they are optimised, supportable and take advantage of enhanced functionality. A major upgrade of the Careflow EPR during summer 2021 is an essential enabler for the Digital Aspirant Programme. Pharmacy and ePMA systems will be upgraded to ensure that they remain supportable and deliver national directives.

Network Replacement The Trust's network will be upgraded to ensure the improved performance and resilience.

Hardware Refresh Programme The hardware refresh programme will continue to ensure that the digitised hospital has capable servers and desktops.

Windows upgrades Subsequent Windows version upgrades will continue to be applied in a timely manner to ensure users benefit from having the latest version.

Internet Development The Trust site will be developed to provide improved navigation features and a better search engine.

7. Programme Governance and Communications

7.1 Programme Governance

Informatics' Programme Boards are accountable to the Trust Board for delivery of programmes. The Programme Boards report to the Trust Board via the Trust Executive Committee. Larger Programmes and Project Boards are chaired by an Executive Sponsor or senior Trust clinician.

Detailed business cases are presented to the relevant authority based on investment needs for each of the projects, to ensure that value for money and return on investment is demonstrated.

Recommendations flow upwards to the Trust Executives weekly meeting for approval of anything which is a new development or anything which is outside of its original scope.

A methodology framework has been developed that enables both the necessary governance of project management and allows the team to be agile in its delivery.

We will improve the quality of project reporting, both for individual projects, and for summaries for senior management to see at a glance the status of delivery across Trust projects.

Improved benefits identification and realisation – Although there has been successful delivery of projects over the course of the last year, benefits have not always been full identified and followed through post implementation. Informatics will work closely with benefit owners, Finance and Information to ensure full benefits realisation is achieved.

Improve handover to Business As Usual and closure of projects – handover arrangements will be considered early on in a project lifecycle (at PID stage) to ensure that roles and responsibilities for a solution when it is delivered are agreed up front.

7.2 Communications and Engagement

We recognise the need to improve the communication of Informatics activity across the Trust. To facilitate that, a post of Communications Manager has been created who will:

- Identify all stakeholder groups

- Help us achieve our overall organisational objectives

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- Engage effectively with stakeholders

- Align communications and engagement to the Trust objectives

- Demonstrate the success of our work

- Ensure people understand what we do

- Provide a regular flow of information to key stakeholders

The Communications Manager will be responsible for enhancing the quality and range of communication and engagement methods across the Trust and will work with the Trust Communications team to understand how to improve our communications and engagement across the Trust.

We will ensure communication is timely and relevant, and is understandable and accessible to all stakeholders.

We will embrace new techniques and different technology for communication and engagement with stakeholders where appropriate.

We will also focus on internal Trust communications, to create a regular and consistent communication and engagement plan for Trust staff, so they feel informed about Trust and Informatics goals and our progress against these goals. This will also drive involvement and focus across teams and will demonstrate the value and impact of our work across the Trust.

HEALTHCARE STAFF ARE MORE PRONE TO MISS EMAILS – HERE'S WHY AND HOW TO FIX COMMUNICATION GULF

8. IT Operations and Infrastructure

8.1   IT Operations

The NHS is facing the challenge of significant financial and operational pressures. The need for IT services continues to grow faster than funding becomes available as digital technology is a key enabler for the NHS Long Term Plan.

The result is we need to innovate and transform to deliver digital excellence, within the resources available. Significant progress has been made in providing the best, affordable infrastructure we can since the last strategy. We will continue to maintain this approach and enhance our infrastructure. We will interoperate with local, regional, and secure cloud based systems.

Technology we provide will be focussed on delivering digital excellence for the hospitals in the wider context of interoperability and collaboration with other providers to support shared and place based care, in alignment with the digital ambitions of the C&M Health & Care Partnership.

The Informatics Department will meet such challenges head on, providing a modern secure and robust architecture that supports the Trust in meeting their overarching objectives and priorities. We will:

- **Ensure infrastructure and systems are robust and deliver salient information to all the right places all of the time**

- **Have sound governance arrangements in place**

- **Facilitate excellent information management and data**

- **Digitise the hospital by replacing paper-based processes**

- **Provide excellent training so colleagues use systems safely**

- **Upgrade & replace systems to ensure optimisation, compliance, sustainability & performance**

- **Fully support collaboration with other providers to ensure best practice and reduce variation**

- **Continue to respond agilely to the challenges facing the NHS and the Trusts' priorities as we did with COVID**

- **Scan the horizon for emerging technology and systems that improve the digital experience and help us deliver 5 start patient care**

- **Automate back office functions such as user accounts and system testing to work more efficiently**

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The Informatics Department is responsible for the delivery of safe and reliable systems across the technical architecture that supports the delivery of 5 star patient care using the Careflow EPR.

Significant improvements to the hospital's architecture and infrastructure have been completed during the previous strategy. These culminate to ensure that our systems and technology are modern, safe, secure, resilient and optimised and available 24/7. We plan further improvements over the next 3 years to ensure we stay ahead of the game.

Systems using the Trust network are accessed via different types of hardware and software with the national wide area connectivity provided by HSCN. (HSCN was implemented to replace N3). To ensure network performance the wireless infrastructure has and continues to be overhauled as more web-based and mobile systems are introduced. The hardware supporting the network, and the core switches will be replaced to ensure the network continues to perform excellently.

The virtualisation of desktops has been completed but further work is needed to undertake the necessary business change within hospital services to fully benefit from the virtual environment and ensure agile and efficient access to systems.

Windows 10, with its replacement of low specification desktops has been completed.

We have put in place a comprehensive security protocol following NCSE (National Cyber Security) guidelines. Our strategy is to provide "Defence in Depth" by stacking multiple security systems and dashboard technology to minimise the risk of disruptions from threats and intrusions and keep pace with the ongoing surge of cyber-attacks that are attempted on the NHS. We have achieved Cyber Essentials and will be optimising the use of this technology by adding additional systems which monitor internal usage and threat within our own hospital systems e.g. Mail.

We will continue to upgrade telephony to ensure it is modern and fit for purpose, replacing obsolete equipment and communication methods as needed. We plan to fully utilise web-based softphone functionality to add reliability and cost efficiencies over the next 3 years.

The COVID-19 pandemic provided Informatics with particular challenges of supporting colleagues in a much-altered hospital environment whist maintaining business as usual.   We harnessed technology which enabled colleagues, and own teams, to work virtually using technology such as Office 365, Skype for Business, Microsoft Teams and Always on VPN. Informatics will continue to provide solutions

to enable teams to work agilely and more efficiently in the future.

The continued growth in mobility, social media and cloud computing also presents Informatics with enormous opportunities to build innovative mobile solutions. Where appropriate, we will continue to:

- **Fully align with the local Accountable Care Systems** by working with partners across Cheshire and Merseyside (and wider) to develop opportunities for collaboration, pathway management, sharing and population health management. Collaboration can be achieved through the integration and hosting of shared systems. This will improve efficiency and reduce unwarranted variation.

- **Improve Wi-Fi** for patients, staff, trainees, and visitors from partner providers in all Trust locations.

- **Improve communications with our service users** by using real-time communication tools such as instant messaging (chat), and video conferencing on different devices. This technology offers staff the ability to be their most productive at any time and from any place.

- **Deploy Cloud based technology** to enable resources and systems to be shared with other care providers to meet the requirements of the wider health economy and its residents.

- **Engage with Regional Network Systems** such as the regional PACS to ensure Trust staff can access to the widest possible data and images available of their patients.

- **Harness emerging technologies** such as virtual reality and best practice health apps to improve the experience and safety of our staff and patients.

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8.3   Service Delivery

Informatics will continue to strive to follow industry best-practice, ensuring that a robust and transparent managed service is provided to the Hospital resulting in a continued reduction in the number of incidents that adversely impact care. We have, and will continue to have in place:

- **Best practice Service Management (ITIL)** use of the "IT Infrastructure Library" framework will ensure a controlled approach to all aspects of the IT support lifecycle.

- **User self-serve and online chat** to give users greater flexibility to self-support and how they contact the Informatics department.

- **Key Performance Indicators** provide transparency about the success criteria of IT service provision and demonstrate consistent delivery against agreed KPIs.

- **Observe procurement processes** to ensure the strategic purchasing of new IT equipment in line with Trust SFIs.

- **Asset management** to maintain auditable systems for hardware and software licensing asset management

- **Mobile device management** ensures devices are secure and locatable.

- **Service Improvement Plans** in place for in all areas of Informatics to ensure we continue to provide excellent and value-for-money services.

- **Lead Provider Framework** to develop a support plan for market-testing future IT and BI Service delivery.

- **ISO27001 Accreditation** of infrastructure and support services.

- **Automation of Processes** to harness clinical and corporate efficiencies, reducing manual intervention and freeing up valuable resource.

- **Configuration Management** Configure systems to ensure optimum benefits and interoperability wherever possible.

- Embrace Prince 2 **Project Management** processes to ensure governance is robust, that projects and programmes are delivered as planned and that reporting is accurate and timely.

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8.4 Service Desk

The Service Desk is the front door for our users. Service Desk engineers assist Trust users through the management of incidents, service requests, problems, knowledge systems and service levels.

The Service Desk receives an average of 4389 requests per month from Trust staff alone. 27% of these are logged through the self-service portal, which is the preferred method of interaction for Trust staff.

In 2019, we implemented a much-improved IT Service Management tool which has enabled us to introduce many enhanced features. Improved reporting allows us to keep a keener eye on how our service is performing and take pre-emptive action on bottlenecks and identify trends.

With the pace at which our digital maturity will grow over the life of this strategy, the IT Service Desk will strengthen its capabilities to provide the best support possible to our Clinicians who deliver 5 star patient care. During the term of this strategy, we will:

- **Continue to explore options to update the technology we use. For example, we will introduce online chat to interact directly with users to resolve their problems**

- **Add a second line engineer function to enable us to resolve more issues directly with the customer.**

- **Expand our team to ensure that systems and technology introduced under the Digital Aspirant Programme (DAP) are adequately supported.**

- **Automate many of the transactional functions we currently carry out, for example password management. This will free engineers to focus on end user incidents and to resolve them quicker.**

- **Achieve global-standard 3 * Service Desk Accreditation within the next year. This will showcase our outstanding service desk capability.**

- **After 2 years we aim to move to the highest possible 4* accreditation that will signify that we have a Service Desk capable of supporting our 5 star Hospital and the digital excellence we expect to achieve during the term of this strategy.**

9.   Information Governance

The Trust continues to strive towards providing excellent information governance which complies with NHS standards and Trust Policy. It is the responsibility of all staff across the hospitals to comply with legislation. To support staff in their understanding of legislation, the IG Team has expertise in applying the Data Protection Act 2018, General Data Protection Regulation 2016 and the Freedom of Information Act 2000.

2020 has been a challenging year. Changes have been put in place at pace in dealing with the COVID-19 pandemic, with the need for safe access and secure sharing of digital information is more critical than ever.

The IG Team continue to work to ensure there is an appropriate legal basis for the sharing of patient data between multiple care providers.

The IG team advises colleagues across the Trust during transformational programmes such as the Digital Aspirants Programme to ensure that the Trust complies at all times with the relevant information privacy, confidentiality, contractual and security laws, regulations and policies. The Trust has a sound governance structure in place - a Caldicott Guardian and a Senior Information Risk Owner who provide assurance to the Trust Board.

For the next 3 years we will:

- **Maintain compliance with the Data Security & Protection Toolkit (DSPT)**

- **Continue to work with 3rd party auditors maintaining annual assurance levels for annual Toolkit submissions**

- **Provide an Information Asset Register that complies with the Records of Processing Activities (ROPA) with Article 30 of GDPR**

- **Work with Information Asset Owners across the Trust to identify system risk**

- **Work with all Trust staff to overcome situations that could arise as a result of BREXIT and the US Privacy Shield**

- **Deliver mandatory training to all staff to ensure the Trust complies with the National Data Guardian Security Standard Number 3**

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- **Data Protection Impact Assessments against all data activities that are likely to result in high risk items**

- **Provide support to all Trust staff on IG matters, ensuring serious incidents are reported to the Information Commissioner's Office within 72 hours**

- **Ultimately, continue to ensure IG is at the forefront of the Informatics agenda**

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10. Patient Impact

But what does all this mean for a family with different health needs and who require different levels of support from our Health & Social Care partners?

Meet our Family

Great Grandma is 82, lives at home, cared for by carers and her family, suffers from dementia and has recently had a fall at home

Grandma and Granddad are both 56 – Granddad suffers from high blood pressure and grandma recently had to attend hospital for blood tests

Mum is 28 and has recently given birth to a baby girl. Dad is 30 and suffers from Type 2 diabetes. Jack is 10 and has autism

Great-grandma's health has been steadily deteriorating over 18 months. She has been living on her own at home, with support from family and a package of care, and was taken into hospital with a suspected infection. On arrival, her observations were taken on **Careflow Vitals**. The senior doctors coordinating care in the Emergency Department were immediately able to see these and prioritise her care according to her clinical condition.

The sepsis team were alerted to her arrival through this assessment, enabling her to receive prompt initial treatment from a specialist team.

On the initial assessment, the nurse undertook a series of **risk assessments** which highlighted both the concerns about her worsening memory, and also that she was at extremely high risk of falls. A fractured hip from a fall in hospital could prove catastrophic: on identifying these risks the clinical team were immediately able to put in place measures to reduce the risk of an in-hospital fall.

The junior doctor assessing her care used a mobile device to review her initial blood tests, and used a structured document in **Careflow Clinical Narrative** to ensure that they followed best practice for managing her condition. Her regular medications and antibiotics were prescribed on **ePMA**. Using **Careflow Connect** she handed over her care to the on-call medical team.

The operations team were able to see the information about her care and treatment on the Patient Flow dashboard. They identified that her care would be best managed on the frailty unit – so ensured that she was able to access a bed in the right part of the hospital, first time. On there she was seen by an extensive multi-disciplinary team. Rapid access to the right clinicians in the right place meant she stayed less time in hospital. The treatment plan and discharge medication prescription were advised to her GP on the **Careflow EPR discharge summary**.

Her records are linked using the St Helens Cares record. Social Workers, Mental Health professionals, family members and her GP can **share important medical information** easily.

Having one integrated patient record, enabled **collaborative multi-disciplinary team working** to ensure discharge from hospital happened at a time that was right for her and the family were assured that the right care was in place.

Although her access to technology is limited, her access to **care and services through a web-portal** is not compromised because her family and carers work with her agreement to ensure she can takes full advantage of digital services to **manage her appointments.**

Frailty is a priority focus of the Accountable Care Service and **shared pathway management** is in place to ensure she gets collaborative, best practice care. Regular **virtual meeting** take place between her care providers.

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Grandma & Granddad both still work and care for Great Grandma, visiting each day. *Granddad* suffers from high blood pressure and needs regular monitoring. Difficult to take time off work for GP appointments, Granddad stays in touch with his GP for monitoring his blood pressure using **a web portal.**

This avoids having to leave work early to travel to the doctors and waiting around in reception. **Using an app on his mobile phone,** he records his blood pressure and reports unexplained spikes to his GP who can speak to him over the phone, and could, if ever needed, refer him to hospital for assessment, knowing that the hospital will have full sight of his record and can make informed decisions about his care.

Whist the majority of the care provided for him by the GP prevents him from unnecessary visits to the hospital. He is able to use **111** to check whether he needs to attend ED is he feels unwell.

When referred by his GP he is able to **review, arrange and change his appointments and view appointment letters** via the **patient portal.** He receives **2 way text messages** about his appointment so he can confirm that he can attend. His preference is to have **Telehealth** appointments using video at home appointments, as this saves him time travel from work or home for his appointment.

If it is essential that he needs a face to face consultant appointment at hospital, **social distancing in the outpatient areas** is strictly observed. He can take advantage of the **public Wi-Fi** in the waiting area and can attend to his work emails whilst waiting.

During his appointment prescriptions are made digitally by the Consultant using **ePMA**. The prescriptions goes directly to Pharmacy which speeds things up and removes the need for him having him join a queue with a paper prescription in a crowded area risking infection. The Consultant dictates the letter to his GP, discharging him, using **voice recognition** whilst he is still in consultation, handing his care back to the GP. This is reassuring because he can hear first-hand what will be sent to his GP. He will receive a text message when his drugs are ready so he can use the **Drive Thru Pharmacy** to collect them from the comfort of his own vehicle.

Grandma is awaiting the results of a recent blood test to try and discover the cause of her feeling very run down. The results are conveyed using the **web portal** on her home computer**.** These can be seen immediately at a time convenient to her without the need to travel to hospital – fortunately there is nothing seriously wrong with her, but given some medical advice, including certain foods to eat, and requested to complete **an on-line diary app to be assessed** at a **Telehealth appointment** to check progress and diary entries.

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Mum recently gave birth to their second child. Things were a little more complicated this time around. **CTG Monitoring** showed that the baby needed delivering urgently so she needed to have a caesarean section. Precious time was saved during the delivery as the Obstetrician could take an urgent phone call using an interactive "**Smart Badge"** activated without needing to remove her scrubs to do so.

The multi-disciplinary team at the hospital involved in Mum's care could all reference the **Workspace** view simultaneously on handheld devices to review **Mum's maternity history** and had access to the whole pregnancy from the **GPs and midwife's electronic notes** . They could perform the operation in complete confidence knowing that Mum's and baby's safety was not being compromised through missing medical information.

Electronic Observations were taken in recovery at a frequency dictated by mum's condition on Maternity Early Warning Score (MEWS)**.** Fortunately, Mum's condition proved stable throughout and did not deteriorate sufficiently to warrant further intervention. The midwifery team could monitor the conditions of all the mums and babies in the unit by reviewing the centrally-located **touch screen device**.

Board rounds and ward rounds were undertaken digitally to enable the multi-disciplinary team to use real time **patient flow** information on an **electronic whiteboard** in the unit to plan prompt, safe discharge.

Mother and baby are now back at home and continue to do well, supported by the community midwife. An **electronic referral** automatically made to the Health Visitor on discharge. Midwife and Health Visitor teams **input results directly into the system from a tablet device** from mum's home.

Dad has diabetes which is monitored by his GP to identify risk of further health problems and ensure Dad is self-managing his condition well. Dad is also under a hospital-based diabetes care team who review his condition on a regular basis.

Dad has a **choice** of how to receive his **care.** He can have face to face appointments or use video appointments to talk to his GP and Consultant via the **Cheshire and Merseyside Patient Portal,** where he manages his appointments with multiple care providers. After each appointment, his shared medical record is updated with data from an **app on his mobile phone**. Dad also relies on this **best practice** app to educate him about his condition. The app is updated regularly by professionals to ensure Dad receives up to the minute advice about Diabetes and how best to self-manage it.

Dad will have this condition for the rest of his life, but **with the right tools and technology** can self-manage his care, retaining a stable condition for most of his life **reducing the potential for a visit to ED and a hospital admission**.

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Jake is 10 and was diagnosed with autism this year. His care is provided by **a multi-disciplinary and multi-agency team working together** with the family reducing **the possibility of fragmented care.**

The child health team shares information between all agencies working together, ensuring that no one part of this team is responsible for his care – **it is a partnership approach that collaborates together,** and each **has access to up to date information** about Jake. To manage this condition now and in the future will take require a **high quality, safe, responsive and well- co-ordinated** team across the relevant agencies, **supported by accurate information that is readily available to the right person at the right time** and which **prevents duplication** and **removes unwarranted variation.**

By the end of this strategy, our family, along with all our patients and their carers that pass through the front doors of the Trust, will continue to see sustained transformation in the way care is delivered across the region and will witness a completely digitised experience when they attend hospital which keeps them safer.

Transformation will result in greater patient choice, flexibility and empowerment provided through technology and innovation that will deliver a more sustainable footing for the Trust and the wider NHS to continue to deliver high quality care both now and in the future. No patient will be digitally excluded.

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11. Measures of Success

More than anything else, the measures of success for this strategy will be tangible benefits for the patient, the clinician and the Trust itself demonstrated through health outcomes.

11.1 Outcomes for Patients

- Improvements in efficiency and quality of care by clinicians having access to real-time, tailored information under a single Careflow EPR login, resulting in more face to face time with clinicians.

- Safer care due to the systems in place for monitoring their condition and prompting rapid action and best practice if their condition deteriorates.

- Less time spent in hospital by having improved patient flow from admission to discharge and better collaborative discharge planning.

- When admitted the patient will be allocated the right bed, first time.

- More appropriate attendance at ED due to alternative means of receiving care via 111 and Urgent Treatment Centres.

- Improved and safer outpatient visits where social distancing is maintained and infection risk is minimised.

- Better patient choice and improved communications enabled by digital technology such as a web-portal, two way texting and Telehealth.

- More effective joined-up care with sharing of patient information across care providers.

- Safe management of their personal data through compliance with Information Governance standards.

- Reduction in the health economy carbon footprint, through reduction in travel, paper etc.

- More investment in their own health and wellbeing by having access to technology, such as best practice apps, which assists with self-management (or management by family and carers) of long term conditions.

- Digital sharing of their data with care providers which ultimately avoids unnecessary hospital visits.

- Full inclusion in hospital services regardless of their own access to technology

- Ability to opt out and use traditional methods of communication if preferred.

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- Increased productivity with less time spent searching for records as the hospital becomes fully digitised.

- Enter data once only in fully-digitised patient pathways.

- Fast, secure access to patient information, in any location, from a single EPR login.

- Decision support and alerting, with access to online best practice, resulting in the best outcomes for patients.

- Consolidated view of patient flow across from ED to discharge ensuring the patient ends up in the right bed, first time.

- Collaboration with multi-disciplinary teams and other care providers to speed up the discharge process and free up beds.

- Improved digital tools for team and cross team working.

- Access to the right mobile device to do their work with an option to use their own device.

- Access to virtual appointments, voice recognition and electronic communications to make care provision more efficient and release time to direct patient care.

- Care planning across multiple care providers, so the patient has more joined-up, accountable care.

- Reduction in duplication and transcription into multiple systems.

- Population health support and access to self-care data to prevent avoidable hospital visits and admissions.

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11.3 Outcomes for the Trust

- World-class digital maturity to match our outstanding rating and 5 start reputation.

- Well governed, positive long term relationships with healthcare partners.

- A well governed and successful track record of IT Programme and Project delivery.

- IT transformation contributing to the Trust's long term financial sustainability.

- A clear and transparent approach to risk management.

- High level of assurance from independent audit reports and the scrutiny of the DAP from NHSX.

- Informatics' Accredited Services with ISO27001, compliance to Cyber Essentials and Service Desk Accreditation.

- A clear and transparent approach to budgetary management and investment strategies.

- A capable, efficient and motivated workforce.

- A fully-digitised hospital.

- Digital enablement to support the NHS 10 year plan.

The Informatics programme is large and complex and there is significant risk of delay and overspend which would constitute a threat to the delivery of benefits and achievement of the Trust's objectives. Additionally, failure to support the complex configuration of live systems would have a serious effect upon the ability to achieve organisational goals. The main areas of risk are summarised in the following table:

No	Risk	Probability (H/M/L)	Severity (H/M/L)	Mitigation
1	Sufficient project resources and management cannot be secured risking delays or abandonment of projects.	M	H	Agree Trust funding through this strategy. Prepare bids to apply for strategic funding offered by the Government. Prepare contingency plans for resourcing shortfalls.
2	Project run late or over-budget, delaying delivery of benefits.	M	H	Use 'best practice' project and programme management methods. Adopt a development methodology to ensure projects are managed in a quality controlled and consistent manner.
3	Loss of efficiencies and disruption to organisation arising from out of date or redundant systems.	M	H	Undertake regular upgrade and system reviews as on-going business as usual and when systems are due for replacement ensure they are replaced in line with EPR strategy.
4	Failure to attract and retain high quality staff leads to heightened risk of project failures and unreliable systems and processes.	M	H	Develop Informatics managers with strong focus on leadership and people management skills; Ensure effective communications at all levels of Informatics staff; Ensure staff qualifications are updated to meet industry standards and best practice.

No	Risk	Probability (H/M/L)	Severity (H/M/L)	Mitigation
5	Informatics is not involved early enough in hospital projects.	M	M	• Reinforce that business MUST involve Informatics from the outset. • Pipeline process as precursor to capital planning • Ensure that hospital projects align with EPR Strategy
6	Lack of flexibility and response to change.	M	M	• Continued review of Informatics Strategy in line with national and local strategies including Trust transformation plans.
7	Increased demand for IT systems as cost improvement enabler (e.g. electronic forms and workflow and complex pathway solutions with associated interfacing) cannot be met by the current establishment.	H	M	• Additional resource requirements are built into the IT Investment programme and business cases to support the ongoing strategy. • Use central funding such as DAP to strengthen delivery team. • Work alongside BAU team to ensure skills transfer into asset management.
8	Informatics strategy is impacted or delayed by organisational changes in local area and nationally.	H	M	• Proactive participation of Trust and Informatics in local and national initiatives. • Harnessing opportunities arising from change. • Agilely response to changes and priorities.
9	Increased demands on the finite business as usual resources due to the expansion of IT systems delivered as part of the Strategy.	H	M	• Additional resource requirements built into the IT Investment Plan and business cases to support ongoing strategy. • Service Improvement plans to ensure department works efficiently.

These risks, and associated action plans, will be managed and monitored through a combination of project and programme risk logs and the departmental risk register.

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12. Conclusion

Since the previous strategy, St Helens and Knowsley Teaching Hospitals NHS Trust has undergone a massive transformation by introducing and establishing its Careflow EPR and by adding significant clinical functionality such as ePMA and Vitals which have improved patient care and outcomes.

Capital investment has enabled Informatics to overhaul the underpinning foundations to ensure the Trust has modern, capable, compliant and resilient infrastructure, and capable modern devices and desktops.

The pace at which such change was achieved has given our Trust a reputation and a business case to receive central funding under the Digital Aspirant Programme (DAP).

The programme will accelerate the digitisation of our hospital under the Careflow EPR in just 3 years to HIMSS Level 5 or greater – digital maturity akin to that of other world-class hospitals.

Informatics, simultaneously with delivering the DAP, will continue to maintain excellent foundations and a suitably digitally-skilled workforce, so that the digitisation can be sustained under business as usual and provide the necessary return on investment.

Informatics has demonstrated its agility in dealing with new challenges and changing priorities. This can be best demonstrated by our response to both waves of the recent pandemic. Continued agility is essential in the next 3 years as the challenges the Trust and the NHS face are not set to diminish and will only be met through digital enablement and improvement:

- Meeting 10 year NHS plan

- Alignment and collaboration with Cheshire and Merseyside Health & Care Partnership and other partners to deliver an 'Accountable Care System' fit for the unique and organic health populations we serve.

- Maintenance of the Trust's 'Outstanding' care rating and the other differentiators which make the Trust one of the best care givers and best places to work.

Technology is a key enabler to these challenges, and we will deliver digital excellence to enhance the quality and safety of our patient care, ultimately delivering the Trust vision of **5-Star Patient Care.**

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13. Informatics Roadmap

Digital Aspirant Programme		

Projects and Plans	2020/21	2021/22	2022/23
Vitals in all care settings to record observations	■		
Telehealth blueprint for any service	■		
Enhanced Encoder	■		
Automated Switchboard	■		
Cancellation and 2-Way Text Messaging	■		
Outpatient ePrescribing	■		
eHandover Rollout	■		
Careflow EPR Discharge Summaries	■	■	
Mobile Order Communications and Results	■	■	
Patient Flow	■	■	
Paperless ED	■	■	
Digitise All Clinical Documentation	■	■	■
Tasks and Alerts		■	
Mobile Device Strategy		■	
Replace Departmental Systems with Careflow EPR pathways		■	■
Clinical Workspace		■	■
Voice Recognition		■	■
Integrate with Share2Care		■	■
Patient Portal		■	■
Integrate Portal with Amity (the C&M Patient Portal)		■	■
HIMSS Level 5 (or above)			■

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Other Projects and Plans	2020/21	2021/22	2022/23
Windows upgrades	▓	▓	
St Helens Cares Population Health	▓	▓	▓
Advanced Threat Protection	▓		
Trust Website Development	▓		
Office Teams and Skype for Business	▓		
Office 365	▓		
Axe the Fax	▓	▓	
Automation of Back Office Functions		▓	▓
Careflow EPR Upgrades		▓	▓
Optimize systems through regular upgrades	▓	▓	▓
Community System for Urgent Treatment Centres		▓	▓
Replace Core Switches		▓	
Development Programme to Upskill Informatics Staff	▓	▓	▓
Improved Communications for Staff with PPE	▓	▓	
Softphone Technology		▓	
Network Replacement		▓	▓
Videoconferencing and Cloud Interoperability		▓	▓
Intrusion Prevention Systems		▓	▓
Accreditation of Service Desk		▓	
BYOD	▓	▓	▓
Best Practice App Enablement	▓	▓	▓
Replace Orphaned Databases with EPR functionality	▓	▓	▓
Hardware Refresh Programme	▓	▓	▓
Service Improvement Plans	▓	▓	▓