

Evidence Pack

The case for continued investment in digital transformation of the NHS and social care

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Background

NHS England has made huge strides in adopting and integrating digital technologies to enhance patient care, streamline processes, increase productivity, and drive innovation. The progress on digital maturity across all trusts has been particularly encouraging. However, this progress is in danger of halting due to lack of sustained funding for such initiatives.

The diminishing financial support for digital health within NHS England is causing a ripple effect across the sector. Established and emerging innovators alike are grappling with financial challenges, making it increasingly difficult for these companies to sustain operations in the UK market. For the government to drive forward growth in the technology sector, continued funding is key. The digital health market is a vital contributor to the UK economy, estimated to be worth £23.98 billion by 2025.

This funding shortfall has significant impact on patient outcomes. Lack of financial support for digital health can mean that patients are deprived of access to cutting-edge innovations that would improve health outcomes. This can exacerbate the strain on healthcare professionals who face a challenging working environment, compounded by growing waiting lists.

The lack of funding not only jeopardises the ability of healthcare providers to adequately support their patients but exacerbates the burden on the system, fuelling ongoing labour disputes. The UK Government must continue to prioritise funding to support the digital transformation of the NHS at previously committed levels.

The case studies included here demonstrate the necessity of investing in digital, data, and technology services to meet the priorities set out in the 2023 mandate to NHS England. While digital is set out as a separate priority, technology is essential to delivering all three priorities. Above all, the examples in this back demonstrate that many technology solutions that are not necessarily revolutionary, and may in fact be relatively simple, can (when adequately invested in and properly implemented) revolutionise the experience of patients and staff.

Priority 1: Cut NHS waiting lists and recover performance

Keeping users out of hospital

2iC-Care's interoperable TEC (technology enabled care) solution, Andi, enables carers to predict, detect, and respond to the needs of their users, keeping people out of hospital. Andi is the first dispersed alarm unit which contains distributed IoT (Internet of Things) software that is designed to be interoperable with any care peripheral type. Since June 2023, Wirral Council, Medequip, and 2iC-Care have collaborated to put Andi to the test.



During the pilot, carers were **able to detect that one service user had an early-stage kidney infection.** They then administered antibiotics and prevented an acute care incident and hospital stay. Andi picked up that the service user's bathroom visits had increased from their baseline of 8 visits per day to 10 visits, then 12, then 14. This caused Andi to automatically raise a 'high bathroom occupancy' alert to the carers.

By centralising data from all peripherals in a single dashboard and removing the need for carers to log into multiple portals, this technology triggers alarms and alerts which carers respond to. This kind of technology allows the NHS to deliver more planned activity and tackle the elective care backlog.

[Find out more here.](#)

Freeing up NHS bed space

Delayed discharge costs the NHS an estimated £1.7 billion in 2022/23 and is upsetting for patients stuck in hospital when they are fit to leave. RIVIAM's Hospital Discharge service connects third sector partners and NHS trusts with the data they need to speed up discharge, reduce readmission rates and increase efficiency. This is currently being rolled out to all wards at the Royal United Hospitals Bath NHS Foundation Trust (RUH), where ward teams can now make patient referrals simultaneously to multiple community, housing, and voluntary sector services working together using RIVIAM at the Community Wellbeing Hub, and then look up the status of these referrals via a dashboard.



A major challenge with delayed discharges is the difficulty of accessing capacity in the care system. The current process often means multiple referral routes and phone calls – this takes time that hinders patient flow and could be better spent delivering care. RIVIAM's Hospital Discharge service reduces this administrative burden and makes the referral process quick and seamless. Integration with the hospital's Electronic Health Record means that the dashboard data is seamlessly updated in near real time. [Find out more here.](#)

Other approaches to freeing up NHS bed space using technology have also seen marked success. Curam is facilitating the fast and secure discharge of hospital patients through their app, which allows a Curam carer sourced in an of less than 2 hours from the posting of a job, and often in minutes, enabling scarce hospital bed capacity to be freed.



The app also focuses on preventing readmission through a Care Assessment Plan and Health Vital tracking capability, which enables carers to monitor basic vitals in the home and report any issues to healthcare partners. By **allowing any deteriorations in conditions to be predicted before they occur** and triggering appropriate active medical interventions accordingly, the app aids nursing and clinical staff capacity by enabling scarce nurse resources to be targeted at priority cases. Over 30 Local Authorities have their own Curam portals which can be aligned to the requirements of hospital discharge teams and allow social care teams to source a carer.

Prioritising at-risk patients

Using advanced language AI technologies, CogStack and Elastic accelerated patients' access to the right treatments and reduced waiting times at King's College Hospital and Guys & St Thomas Hospitals. During the COVID-19 pandemic, CogStack swiftly tracked cases, providing crucial information for pandemic preparedness. It enabled clinicians to **drastically reduce search times for critical medical situations** by enabling them to identify and retrieve pertinent patient records without dependency on spreadsheets and manual data review. Clinicians using CogStack can cohort and prioritise at-risk patients, pinpointing urgent conditions and abnormal results. The success of CogStack at King's College Hospital has led to federated deployments of the platform in other leading UK hospitals.



The integration of Elasticsearch Platform, language AI, and generative AI enhances Cogstack's capabilities for gathering data from a vast range of source systems in varying formats (structured and unstructured). Clinical research productivity is dramatically enhanced with improved recruitment into clinical trials, enriched data flows into registries and deep phenotypes for genomics research. CogStack was developed by the NHS with support from Health Data Research UK, National Institute of Health Research, and Innovate UK. [Find out more here.](#)

Waiting and recovering better

NHS Humber and North Yorkshire (HNY) Integrated Care Board (ICB) looks after the NHS spending and performance across a region home to 1.7 million people. One of the biggest challenges facing NHS HNY is managing the growing elective care waiting list. As part of its Recovery in Primary Care Plan, it has been working to improve the outcomes and experience for patients with planned appointments, focusing on prevention and management of long-term conditions. The team identified that health apps can offer convenient and effective ways for people to improve their health whilst waiting or preparing for surgery, and to speed recovery after discharge. It was important that each app met clinical, data and security standards.



The ICB used the Health App Library provided by the Organisation for the Review of Care and Health Apps (ORCHA), utilising the library to put the right apps in the hands of the right people at the right time. ORCHA enabled the library to be highly configurable, adding a dedicated campaign landing page to drive targeted health app adoption. ORCHA created a Waiting Well and Beyond campaign. During August and September, the programme saw 7,648 people visit the page, and approximately 27% of these people download a health app as a result. **Based on NICE evidence, each download helps save the NHS £93 in costs.**

And so over eight weeks, this campaign not only helped provide support to people when they needed it, improving their health, but also saved the NHS £189,906. If this continues over one year, the saving could exceed £1 million.

Reducing triage time

System C's CareFlow Clinical Noting function has reduced Bristol Royal Hospital for Children's (BRHC) reliance on paper forms. These electronic processes **halved the time taken to triage patients** in the paediatric Emergency Department (ED), ensuring care is directed rapidly at the sickest children. In a further boost to patient care and safety, the rollout of a new digital Casualty card (Cas card) is transforming documentation and communication around the hospital – with significant efficiency and time-saving benefits.



In the ED, demand had increased year on year, and there were concerns that time pressures and stretched resources could impact patient safety. Winter 2022 saw a trebling of families in the Children's Emergency Department, from 35 to 100. Without digital clinical noting and improvements in triage processes, patient care would likely have been compromised.

Using digital systems allows vital information to be captured and displayed in real time, so critical data regarding the patient's condition can be acted on without delay. Screen alerts immediately flag areas of concern, notifying the medical team that a patient needs emergency attention.

Further improvements are planned to **bring triage to less than 4 minutes per patient**.

[Find out more here.](#)

Optimising surgical outcomes

By using Microsoft's Azure Machine Learning and Response AI dashboard, Northumbria Healthcare NHS Trust is helping patients make informed surgical decisions and ensure the Trust is placing the right patient with the right doctor.



Like many Trusts, Northumbria Healthcare had to cancel many elective procedures due to the pandemic. Microsoft's technology providing better information and has several benefits:

1. patients and doctors can make a **more-informed decision** about whether to have a procedure;
2. doctors and surgical staff can be on **alert for possible issues**;
3. hospital schedulers can **assign patients to a facility** with a level of care appropriate to their risk factors.

This technology can help identify patients who could safely have surgery at a lower-specification hospital, thereby reducing the wait for both lower and higher-risk patients, reducing risk, uncertainty and improving patient outcomes. [Find out more here.](#)

Reducing length of stay

Manchester University NHS Foundation Trust embedded Alcidion's Miya electronic observations solution in all in-patient areas across 55 wards in both adult and children's Manchester hospitals. Alcidion also supported the Trust's informatics team to apply 'track and trigger' technology across all wards, allowing more serious clinical needs to be escalated in a timely manner.



The Trust has improved its patient record integration, ensuring that the patient observation process continued seamlessly across Trust sites, maintaining a single patient record for the duration of a patient's care with the Trust. The data collected from several thousands of observations every day is also helping the Trust review how different wards respond to patient needs and identify ways to improve. Since implementing Alcidion's solution, the Trust has been able to **halve the number of cardiac arrests, reduce the risk of mortality for out of hours admissions, and reduce critical care length of stay by 29%.**

Creating capacity

Inhealthcare's Oximetry@Home service allows COVID-19 patients to be looked after safely at home by allowing health professionals to track vital signs and responses to questions, acting on any changes to their condition accordingly in response to real-time information feeds. Working across seven Southern Integrated Care Systems during the pandemic and partnering with Wessex Academic Health Science Network, Oximetry@Home allowed for rapid scale-up of remote monitoring services, improving capacity management across primary and urgent care.



For patients who utilised Oximetry@Home compared to those who did not, **hospital stay length reduced by an average of 6.3 days; only 3.6% of Oximetry@Home patients were admitted to ICU compared with 8.2% of patients not using the service;** and a mortality rate of 5.8% was observed in patients using Oximetry@Home within 30 days compared to 20.5% patients not using the service.

Priority 2: Support the workforce through training, retention, and modernisation

Improving productivity

Ageing IT infrastructure at Mid Cheshire Hospitals NHS Foundation Trust was having a detrimental effect on the day-to-day work of thousands of staff. Being more than 10 years old, many of the desktop devices were slow and prone to regular problems, which impeded the productivity of staff, costing an estimated **£942,000 annually in 'lost time'** and placed pressure on the internal IT help desk.

CDW helped plan and implement a migration to Microsoft Office 365, the roll-out of new Lenovo devices, supported configuration and provided user adoption training. Log-in times have been dramatically cut, **staff are undertaking more appointments per day** and there have been improvements in mobility, security, collaboration, and workflow. [Find out more here.](#)



Reducing demand on care services

Devon Training Hub, part of the NHS in south-west England, wanted to transform the delivery of its care services by pioneering the use of immersive technologies. Solutions Integrator Insight Enterprises worked with local caregivers to explore the potential of augmented reality and how it could enhance services in care home and domiciliary environments.



Provision of adult social care in Torbay is delivered by 3,500 direct care colleagues. Although the vacancy rate is lower than the national average, **around a third still leave their jobs each year**. Increased demand and skills-related issues put pressure on services that enable people to both avoid admission and delayed discharge. While providing home care to clients is irreplaceable, complementing this with modern ways of working offers a real solution to this healthcare challenge.

The use of the immersive technology headsets by caregivers reduces demand on health and care services, increases capacity, and enables staff to work to the top of their skills sets. Firstly, if a caregiver suspected a health issue, which they were not trained to assess or diagnose, they were able to instantly connect to a more qualified/experienced member of staff using HoloLens – providing quicker assistance to the individual receiving care. Secondly, bringing registered nurses and clinicians onto a virtual call removed the need for on-site visits, significantly reducing the time to deliver assistance. [Find out more here.](#)

Training staff for the digital future

Sefton Careline is investing in the future by developing and implementing a digital strategy that will ensure its service remains robust and resilient as the UK's communications network transitions from analogue to IP. It also aims to reshape the service, using digital solutions and smarter workflows to increase its capacity.



Careline and Tunstall worked closely together to ensure project was managed and delivered without impacting on service users, and that the data migration was seamless. Operators received support from Tunstall's specialist training team prior to using the new system, but as the software is intuitive and an evolution of PNC, training was straightforward. The Tunstall training team was also asked to deliver training on telecare assessment, equipment, and installation to two installers (one new, one in post for some time) and a Trusted Assessor. A full day in person training was delivered, followed by further training on installing and programming Tunstall Lifeline Smart Hubs online. [Find out more here.](#)

Reducing the administrative burden

With a patient list of 21,500, Stowheath GP surgery was struggling to keep up with demand. Using a telephone triage model, the reception team was inundated with inbound calls, making it difficult for patients to get through. Meanwhile, clinicians' time was being spent on triage calls, reducing the time available for consultations. As a result, only 25% of requests (medical issue, repeat prescription, sick note, etc.) were completed on the day they were made. The practice required a new triage solution that would improve efficiencies, allowing its staff to support patients in a more timely and responsive manner.



Within 3 months of implementing askmyGP, Evergreen Life's online consultation system, Stowheath's **same-day completion rate soared from an average of 26% to 68% of requests and reached 88%** in 2022. Comprehensive, real-time reporting has provided the practice with a clear view of operations, making it easier to schedule staff according to demand. **8 out of 10 requests are now made online**, meaning the phone lines are kept free for those that need or prefer this method - although patients in their 90s are among those using Stowheath's online route. Evergreen Life has improved staff morale by reducing workload and administrative burden. With a streamlined process, staff members can provide a more efficient and effective service, delivering quality, timely patient care.

Boosting productivity

Collaborating closely with Princess Alexandra Hospital, with a local population of 350,000, Riverbed's Aternity Digital Experience Management solution was instrumental in empowering ICT teams. Its primary function is to enhance visibility into the end user experience across all applications and devices, thereby optimising the digital experience for clinicians to give more time back to them for patient care.



After implementation, PAHT successfully elevated productivity by minimising downtime for clinical staff, all while upholding a high level of patient care. The hospital expects to see an **estimated £2.5- £3 million in total IT cost savings over a span of 5 years** ([find out more here](#).)

Riverbed has also collaborated with Kent Community Health NHS Foundation Trust (KCHFT). Recognising the NHS's specific sustainability goals, Aternity provided KCHFT with an opportunity to reassess their asset refresh plan based on device performance. Leveraging these insights, KCHFT discovered the potential to **reduce asset refreshes by 42%**. They realised they **wouldn't need to replace 42% of their 1784 licences aged 5 years or older**. This not only aligns with the Trust's environmental, social, and governance (ESG) objectives but also contributes to a significant reduction in overall expenditure. [Find out more here](#).

Automating admin

The Robotic Process Automation (RPA) service provided by Sopra Steria's NHS joint venture has saved trusts hundreds of hours and tens of thousands of pounds each year through conducting time-consuming repetitive tasks such as staff rostering and invoice consolidation, in turn releasing highly valuable resources for clinical care. Since 2020, Sopra Steria has deployed almost 100 robots in the NHS, covering 250 processes, and **saving over 500,000 hours**, the equivalent of condensing 240 working years into just four years.



Working with Lewisham & Greenwich NHS Foundation Trust, Sopra Steria's RPA solution consolidated 18,000 pharmacy invoices per month into around 300, saving 20 hours per month in processing time, and leading to **£40,000 annual savings**, equating to a **266% return on investment**.

Freeing up time to care

Cwm Taf Morgannwg University Health Board implemented Civica Scheduling, an e-scheduling software, providing huge benefits to the District Nursing team. Prior to implementation, the scheduling of home visits was incredibly labour intensive, with senior nurses often taking 3-4 hours per day scheduling visits manually, and often lead to missed visits, duplication, and reduction in clinical efficiencies.



Civica's e-scheduling software has allowed the Trust to be able to **identify available capacity** and has been able to accommodate greater patient demand by freeing up time to care, **reducing clinical risk** and ensuring patients are seen by the right clinician at the right time. Due to the success of the e-scheduling project, the Welsh Government implemented the software across all district nursing services in Wales, ensuring that the benefits can be seen nationally. [Read more here](#).

Priority 3: Deliver recovery through data and technology

Reducing follow-up appointments



Harrogate & District NHS Foundation Trust is transforming post-operative follow-up care by utilising Patients Know Best's (PKB) messaging service to send personalised video messages to patients and the library function to store FAQs. Patients often struggle to retain information after surgical procedures, so consultants can record details about their surgery which are securely stored in the patient's PKB health record to access at their convenience. This reduces unnecessary follow-up appointments, minimising pressure from unscheduled GP or emergency visits and freeing up valuable clinical time.

Research shows that in traditional ward rounds 40-80% of medical information is forgotten immediately by patients, while some day surgery patients leave without the opportunity to receive adequate guidance. **Up to 50% of scheduled follow up appointments could be avoided if patients had access to robust post operative information.** Addressing this challenge could significantly contribute to the NHSE's goal of reducing outpatient follow-ups by 25%.

Traditionally about 50% of patients require clinical assessment around 4-6 weeks after surgery. The remaining cohort, however, are seen for reassurance. The pilot assessment indicated that using the video messaging model meant **only about 15% of this reassurance cohort would still need a follow-up appointment versus 75% using the legacy approach.** The success in the pilot has resulted in Harrogate identifying 3 more specialty areas for go live and NHSE funding resources for other Trusts to follow suit. [Find out more here.](#)

Harnessing data-driven insights

Hepatitis C is a virus that can infect the liver, and if left untreated go on to cause serious liver damage, cirrhosis, or liver cancer. **Early intervention can enable potentially lifesaving care, whilst also reducing future demands on the NHS.** Outreach services have had great success in finding and treating patients, but large cohorts remain who may have no knowledge or symptoms of the virus.



Deploying EMIS' Pathway solution as part of the NHS England Hepatitis C elimination programme has enabled healthcare teams to uncover and treat at-risk patients. Pathway searches primary care data for coded Hepatitis C risk factors in patient records and supports GP teams to refer these patients into secondary care. Supported by data sharing agreements, Pathway also enables primary care teams to seamlessly share access to relevant patient information. In doing so, primary care teams have supported patients in the pilot area to access testing and receive lifesaving treatment, who had not been picked up from other Hepatitis C screening services. Pathway unlocks opportunities to **proactively intervene at the right time and in the right setting.** [Find out more here.](#)

Supporting citizens in the community

Disparate systems across Southwark Council meant that care and support services were isolated, resulting in miscommunication. Case progression was slow due to the inability to handle enquiries quickly and efficiently, lacking the availability of information in a single place. Over time the combination of technological investment in a variety of systems created a disjointed viewpoint, compromising data handling. All of which impacted the citizen experience, delaying response times.



Hitachi Solutions began to work with Southwark Council, starting with the Vulnerability Hub, due to the Covid-19 pandemic. Southwark Council looked to seize on the digital transformation momentum, deploying a central data platform with Hitachi Solutions in late 2021. Southwark Council's Children's services team were the first to onboard onto the data platform, where they worked with Hitachi to bring together 7 disparate data sources to create a **360-degree view of a child and family.**

The platform integrates disparate data sources to achieve a visualisation of families who are entitled to government funding and support. The fact the **single dashboard has combined multiple systems** enables support workers to have a much more holistic, adaptive picture of need, and changing needs. [Find out more here.](#)

Improving outpatient processes

To overcome waiting times and improve patient satisfaction, the University Hospitals Coventry and Warwickshire partnered with IBM to implement changes that would improve performance and patient satisfaction in the outpatient department.



IBM focussed on an approach called intelligent workflow - using process mining, AI, and user centred service design. The team implemented several technologies and service changes, including generative AI and virtual assistants. The impact was impressive, and within just 8 weeks the numbers of **DNAs fell from 10% to 4%** (for those eligible for 2 text messages), **saving £473,000**. Additionally, the flow through outpatients increased, **reducing the patient backlog by 10-15%** according to early estimates. Estimates suggest that if this approach was replicated in other Trusts, the increased outpatient capacity would support clearing the **current elective backlog within 12 months**.

Speeding up connections

Credera have worked alongside NHS Digital on the Health and Social Care Network migration. This is Europe's largest Wide Area Network (WAN) migration, helping the NHS save millions of pounds. The HSCN programme is responsible for leading the procurement and replacement of 14,500 services for GPs, NHS Trusts and other sites across England. The new HSCN delivers increased choice and flexibility, as well as **saving the NHS £75 million annually**.



The speed and reliability these connections bring improves the NHS's ability to share life-saving information quickly and correctly across different sites, assisting with the NHS's ongoing digital transformation journey. The increased bandwidth and reliability provided by HSCN aids online interactions between patients and clinicians, allows sites to increasingly adopt digital services, and **improves the sharing of expertise between care providers**. Having a more powerful digital network is critical for the NHS, especially during times where face-to-face interactions are increasingly replaced by digital interactions. [Find out more here](#).

Reducing A&E admissions

Frimley Integrated Care System worked with remote monitoring company Docobo to segment high risk patients and use remote monitoring to reduce the workload for staff in primary care and overall hospital and GP visits for patients, as well as enhancing patient outcomes. With the primary care workforce under immense pressure, and patients who were not optimised for their long-term conditions, Frimley ICS Connected Care team wanted to look after complex, frail patients with the highest risk of unexpected illness and deterioration over winter.



Moving to a more proactive and holistic model of care, the team used population health management analytics from Graphnet to identify and segment patients, then using Docobo's remote patient monitoring to achieve fantastic results: **33% reduction in monthly admissions, 55% reduction in monthly GP face-to-face appointments, and 32% reduction in monthly A&E activity**. The remote monitoring consists of weekly and monthly question sets, which are submitted to a digital health team, triggering a RAG-related response, and alerting the appropriate service if needed.

Managing operations

Aire Innovate has worked with Leeds Teaching Hospitals NHS Trust to increase hospital capacity by reducing the backlog of planned operations, using their low-code EPR solution to put power back in the hands of clinicians. The whole pre-operative assessment process was digitised for elective patients. Across four hospital sites and an annual 10,000 patients, the new process enables patients to receive an assessment link via SMS and complete it on any personal device. The system triages patients with more complex procedures which require face-to-face contact. Aire Innovate's solution **saves thousands of face-to-face appointments each year**, benefiting patients (reducing carbon with less travel time) and realising infection prevention for the hospital. Administration of paper documentation has hugely decreased, with the **savings in administrative staff time alone calculated at £57,000 per annum per department** and hundreds of thousands in overall cost savings. Aire Innovate has also already completed the next groundbreaking step in this area, using AI to automate further aspects of the pre-operative process.



Reducing demand on GPs

Advanced, a healthcare software solutions provider, has recently completed a successful trial of its Patchs Telephone Assistant, a service that will transform the way patients interact with their GP practices and reduce demand on GP receptionists.



The service allows patients to leave a voice message describing their request, which can be automatically transcribed and processed like a standard online consultation request. Patchs Telephone Assistant acts as an additional member of the reception team, freeing up staff time so they can focus on other high value responsibilities, improving overall practice workflow to accomplish more during the working day.

Patchs has had significant impact, **reducing the amount of time a patient is on a call from over 35 minutes to under 6** and receiving support within 70 minutes. Additionally, receptionists now only spend 3 hours per day talking on the telephone – down from 10 previously. [Read more here.](#)

About techUK

techUK is the trade association which brings together people, companies, and organisations to realise the positive outcomes of digital technology. With over 1000 members (the majority of which are SMEs), techUK creates a network for innovation and collaboration to provide a better future for people, society, the economy, and the planet. Providing expertise and insight, we support our members and stakeholders as they prepare the UK for what comes next.



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