



Empower Clinicians
with Intuitive Information
at the Point of Care

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INTRODUCTION

The pace of digital transformation throughout the National Health Service (NHS) has increased recently, as ways of working transformed in response to the COVID-19 pandemic. However, the digital maturity of organisations across the UK remains varied. While some Trusts have nearly eradicated paper and are providing clinicians with immediate access to detailed patient information at the point of care, others are still struggling with disjointed information, including paper records.

For stressed NHS staff facing lengthening waiting lists and an acknowledged risk of burnout, immediate access to trusted information that is easy to interpret is now more essential than ever. Within the NHSX **“What Good Looks Like”** framework for measuring digital transformation, two of the seven strands focus on just this point.

“SUPPORTED PEOPLE: The workforce is digitally literate and able to work optimally with data and technology.”

“IMPROVE CARE: Health and care practitioners use digital and data to improve health and wellbeing, transform care pathways and deliver innovative and sustainable care models.”

4 EMPOWER CLINICIANS WITH INTUITIVE INFORMATION AT THE POINT OF CARE



Information is at the heart of healthcare digital transformation, but it is vital to understand both how clinicians can use information to improve the daily working environment and assess opportunities for process improvement that can enhance the experience at the point of care.

As Trusts evolve along the digital transformation journey, they are creating an ever-increasing volume of information that can transform patient care—from electronic patient records (EPR) and patient administration systems (PAS) to imaging and body maps. They are creating the foundation for new ways of collaboration and exploring innovations in the areas of artificial intelligence to improve patient outcomes.



It is essential to recognise that every NHS Trust has multiple stakeholders with different information needs and there is no “one size fits all” to support every workflow. From ward rounds and patient assessments, to the complex care needs within emergency departments (ED), intensive care units (ICU) and theatres, it is vital that stakeholders have immediate, highly intuitive access to the information they need, including supportive workflow and effective planning and time management tools.

As digital innovators have discovered, the way information is presented and accessed can not only impact clinician engagement and the pace of adoption for new systems, but also support the creation of new workflows that improve efficiency and enhance patient interaction.

Supported by clinical input and opinion from two digitally mature NHS teaching hospitals, this white paper focuses on the information clinicians capture and retrieve at the point of care and assesses how to best present that information to meet the needs of individual stakeholders.

The Digital Journey

Throughout the NHS, emphasis is now moving from the **digital exemplars** to digital aspirants to meet evolving healthcare needs. Building on the learning from the **Global Digital Exemplar** programme, there is growing focus on the importance of sharing knowledge and experience to fast track digital transformation and create a more consistent experience for clinicians and patients across the country.



The investment in **shared care records (SCR)** is just part of the increasingly rich information resources collected and shared by Trusts. Highly sophisticated EPRs combine in-depth patient information, including imaging and test results, with workflow and evidence to support patient care decisions.

These are complex, valuable data resources that can empower clinicians but only if they can be viewed and used effectively. How is information presented? Is it intuitive and available on one screen or are clinicians compelled to scroll? Is the screen resolution

and size adequate to interpret images or collaborate with colleagues? Indeed, why invest in a state-of-the-art EPR if staff can see only a tiny subset of the information on a small tablet or have no confidence in their ability to review images on a smaller, lower resolution laptop screen?

Hardware and Software Solutions

While data is becoming available at a system level, for many clinicians, gaining access to that information at the point of care remains a challenge. Clinicians still spend a large portion of their shifts walking to and from the bedside to workstations, then waiting for a workstation to become available. Research suggests **more than 25%** of a nurse's time is spent walking the hospital floor.¹ These delays can slow down patient treatment, and can result in additional time spent in hospital. These inefficiencies can also add to the risk of error, from ordering the incorrect tests to recording inaccurate information.

¹ Westbrook, J. I., Duffield, C., Li, L., & Creswick, N. J. (2011). How Much Time Do Nurses Have for Patients? A Longitudinal Study Quantifying Hospital Nurses' Patterns of Task Time Distribution and Interactions with Health Professionals. *BMC Health Services Research*, 11(1), 319.

Even more frustrating is the deployment of innovative, information rich EPR systems on smaller displays that are less usable at the point of care. This can add stress to a workforce already under immense pressure.

To maximise the value of this investment in data resources, improve the day-to-day working environment for clinicians and support improvements to the patient pathways, all Trusts need to provide clinicians with rapid, reliable access to systems and information at the point of care.

“Investing in proper technology at the point of care to provide real time trusted information is better for both patient and clinician,” said Helen Gyves, Lead Nurse for Clinical IT, University Hospitals Birmingham (UHB).

The digital transformation progress made across the NHS over the past few years has been impressive, yet many Trusts still lack intuitive access to in-depth patient information, especially at the point of care.

Understanding Information Needs at the Point of Care

Informatics teams across NHS Trusts are dedicated to reviewing the evolving store of digital content to make sure it is appropriate to daily use. Digital systems need to be configured to support effective, compliant clinical practice while also meeting the needs of frontline clinical teams. A fundamental part of this process is to consider the care environment and determine the hardware needs of care teams to ensure high levels of adoption. This is changing fast as the breadth and depth of available information increases.

Accessible and Intuitive

With the rapid deployment of EPRs providing more detailed, integrated patient information, clinicians need to rapidly interpret patient data, which increasingly includes medical imaging. If clinicians are to gain value from the information and actively engage with new technology, it is essential that the information is clearly presented. Screen size and resolution are now serious considerations.



Queen Elizabeth Hospital, part of University Hospitals Birmingham NHS Foundation Trust, initially provided staff with tablets, but the screen size was inadequate for the breadth of information available. “The EPR is now so big and has so much information it is difficult to see enough information on a single tablet screen to keep the patient safe,” explained Helen Gyves, UHB. “Using the system on a tablet requires a lot of scrolling, which doesn’t work for clinicians who just want to read what is in front of them. In addition, tablets need constant charging, they get dropped and are an infection control nightmare.”

As a result, UHB has removed all tablets and now uses carts throughout, from the ED to ICU, imaging to theatre, wards to outpatients.

The quality of point of care computing can directly impact the way clinicians use information within clinical settings.

The Influence on Technology Adoption and Engagement

For clinicians, the arrival of new technology can either be hugely valuable—or a workflow challenge. Ensuring clinician adoption is a key component of successful digital transformation. With so much change, Trusts need to consider the diverse information needs of multiple stakeholders across different care areas. It can be easy to assume a “one size fits all” model—such as the ubiquitous laptop—could be the solution.

The issues highlighted with tablets and screen size also apply to laptops, leading some Trusts to struggle with user adoption. At the Oxford University Hospitals, clinicians used laptops to access information at the point of care in the past. This approach was initially satisfactory, given the limited amount of information to be found in the EPR and most transactions being investigations-related. However, as soon as the Trust added electronic prescribing and medicines administration together with clinical documentation, the problems started.

The screen became too cluttered, and there was not enough space to display the information intuitively. Since then, the Trust has continued its digital journey, further expanding the traditional patient information available to clinicians in an EPR to include extensive digitisation of nursing and medical workflows as well with numerous automated assessment processes and decision support.

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As Simon Noel, Chief Nurse Informatics Officer, Oxford University Hospitals NHS Foundation Trust, (OUH) said, “The small laptop screen doesn’t support the needs of different clinicians demanding to see more information in one place at one time. It doesn’t provide the flexibility to display information in context, which means you run the risk of frustration because you can’t see what you need to see, when you need to see it. There is even the risk of missing information if it cannot be displayed in an appropriate way.”

Clinician Confidence

The result is that many clinicians rapidly lose confidence in the system. Yet when presented with the same information on a large screen, the response is usually different. As Dr. Paul Altmann, Chief Clinical Information Officer at OUH, confirmed, “People who were exposed to the laptop said the system was hard to navigate, unintuitive and clunky. When we showed people the same system on a wider screen, they often didn’t recognise it. A big

screen can show more information and it is a much more satisfying experience for the clinicians.” As a result, the hospital has started replacing many of the laptop carts previously used with powered mobile carts that support larger screens up to 24 inches in size.

Using Information Resources to Improve Patient Workflow

Larger, higher resolution screens are allowing clinicians to change the way they work. The ability to view and review images, for example, at the bedside or during a ward round, can help accelerate decision making. A larger screen also offers additional space allowing, for example, easier display and viewing of visible warning flags that stay active until resolved, helping clinicians follow key actions within a workflow.

Sharing Knowledge

Large screens are also supporting more effective clinician interactions during ward rounds, especially in acute surgical and medical wards where rounds include a diverse clinical team who need to view and review information simultaneously and manage workloads. This is particularly valuable in teaching hospitals such as OUH and UHB, where the easily

accessible information provided on a large screen supports the bedside education process. Height adjustable, ergonomically designed carts also ensure the technology can be used comfortably by multiple clinicians with different physical needs.



“A powered cart is essential for ward rounds with as many as five people all reading the records, looking at imaging, prescribing and notes—they could not do that on a laptop,” confirmed Helen Gyves.

Patient Experience

Access to a larger screen is also changing the patient interaction and encouraging patients to become more engaged in their own care plan—another key strand in “**What Good Looks**

Like.” Unlike a laptop, which can become a barrier between patient and clinician, working together on a larger screen allows patients to see, check and discuss the information. This approach supports the Triangle of Care, which ensures the right distance between the provider, patient and technology to maximise comfort and the patient-clinician relationship.

“Being able to view the information together gives a far better interaction with the patient,” said Dr. Altmann. Adding, “Manoeuvrability and lightness of the cart also helps to make the technology look less imposing to the patient.”

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Improving Workflow

At UHB, the in-house developed EPR includes a “noting” tab that prompts staff to update the system after every interaction, providing a complete record of the patient’s assessment at the point of care. “The improvement in the level of documentation for each patient has been staggering,” said Helen Gyves. With better information, everyone involved in a patient’s care has more confidence in their ability to make the right decisions.

Within intensive therapy departments, space around the bedside is always at a premium and infection control protocols have increased the focus on minimising unnecessary equipment. UHB has recently removed the bedside locker for patient belongings and moved the items to the drawers on the existing powered carts that previously replaced the ICU charting tables. For phlebotomy teams, the use of specially designed powered carts combines fast access to information and mobile label printing, with lockable drawers to store all needles and syringes securely.

The availability of powered carts also provides visiting clinicians, including dieticians, physiotherapists and mental health teams with immediate access to the information they need to work with a patient at the point of care.

Dr. Altmann said, “In fully digital hospitals, staff expect to have the right equipment at the point of care. When they go to see a patient, their first thought is to get a powered cart, sit down with the patient and use that in real time, the cart becoming the equivalent of the patient’s bundle of paper records.”

Focus on Continual Improvement

For those Trusts already well established on the digital transformation journey, innovations are continuing at pace. For example, at UHB, staff within ED have recently requested dual screen configurations. The dual screen setup allows staff to see the patient’s EPR and PACS imaging simultaneously, whilst including information about patient arrival time and departmental performance dashboards showing where a patient is within the care process.

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Within imaging, the multiple screen approach is already established, providing users with high resolution imaging and EPR and radiology information system screens. Given the increasing depth and breadth of information, the shift toward dual screen is likely to continue in wider areas to ensure clinicians can make the most of this resource.

As Helen Gyves said, “We have to invest in improving—we need to keep moving to the next stage.”

In addition, the availability of large screens at the point of care is influencing new developments, allowing more innovation in the way information is presented to clinicians. For example, at OUH they are exploring the use of high resolution for an interactive body map display specifically for a patient with complex wounds.

As Simon Noel said, “This is a good example of evolution. A big screen display would give all the information in one place, making it far easier to see what is going on with a patient in a high care area and ensuring nothing is missed.”



CONCLUSION

The pressure to change has never been greater. Clinicians need better access to resources, a chance to minimise delays, enhance collaboration and improve patient outcomes. The rapid evolution of EPR systems has provided far more detailed patient information, which can only be displayed clearly on larger screens with greater resolution that match the resolution requirements of the specific EPR. It is important to ensure that the way an EPR is displayed on a desktop computer at a nurse station is replicated at the point of care on a cart.

There is much focus on developing new systems to provide better patient information, but as part of that process, it is vital that Trusts take the time to consider how clinicians will access the new data resources. Powered medical carts are one solution, but it is critical to consider the needs of each care area as one size doesn't fit all.

Some wards may work effectively with just five powered carts, others may need 20—a decision to allocate all wards ten will simply not work when staff need to use the systems simultaneously. As Dr. Altmann, OUH, said, “You cannot have people queuing for access to these systems. You cannot slow down the clinician's workflow—if you do, patient care may suffer and staff stress levels rise hugely.”

This is a continually evolving digital journey. As information resources continue to expand, it is essential to consider the best way to provide that information to stakeholders at the point of care.

As the NHS continues with the rapid expansion of digital systems, including EPRs, it is important to understand the lessons already learnt by the digital innovators to ensure the value of that investment is maximised with the right point of care technology.

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