Leeds Teaching Hospitals NHS Trust

Harnessing the clinical benefits of point of care scanning

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Introduction

Leeds Teaching Hospitals NHS Trust (Leeds) is not only a Scan4Safety trust, it is also a trust at the forefront of digital transformation. In 2016, Leeds became one of six demonstrator sites involved in the Department of Health and Social Care's (DHSC) Scan4Safety programme, tasked with implementing Scan4Safety principles across the trust to improve patient safety, reduce unwarranted clinical variation and drive operational efficiencies – in turn releasing time to care.

The premise of the programme involved the introduction of GS1 standards for the unique identification of every person, every product, and every place, labelled as the Scan4Safety core enablers.

This involved using:

Global Service Relation Number (GSRN)
for patient and staff ID (person)

Global Trade Item Number (GTINs)
for items (products)

Global Location Numbers (GLNs)
for locations (place)

Two years ago Leeds implemented electronic observations (eObs) as part of National Early Warning Score (NEWS) monitoring of patients. The introduction of eObs allowed clinical staff to perform a patient's observations at the patient bedside using an iPad or computer on wheels.

This made it easier to capture and record observation readings digitally, allowing them to be logged directly into the electronic patient record. All observations were recorded as soon as they were taken at the patient bedside, allowing the readings to be updated in real time. This was also coupled with the mandatory scanning of the GS1-compliant barcoded patient wristband – the patient's unique identifier – which used the GS1 Global Service relation Number (GSRN).

By requiring the wristband to be scanned at the point of care (POC), staff were able to guarantee an accurate positive patient ID prior to entering the observations into the patient record, creating an added safety check.

Starting with adult inpatient wards, Leeds began work on introducing wristband scanning as part of the eObs process.

A roadmap for staff onboarding and engagement

Firstly, a host of clinical champions were established to focus on implementing functionality. Heads of nursing, matrons, and ward managers were contacted and involved as part of the pre-implementation activities. As the implementation phase approached, the team focused on engagement with ward administrators and digital champions to facilitate the rollout.

Next, the project team concentrated on senior level engagement – highlighting the value the data insights this process could deliver for clinical teams and medical directors. For them, the benefits were evident from the outset and the aim was set to roll out before winter to help accommodate winter pressures. However, the clinical teams were the harder audience to convince as it was seen as an added task for them to do in an already busy work environment.

To overcome this apprehension, the team focused on building relationships with key user stakeholder groups – engaging with teams from both clinical and non-clinical backgrounds. This enabled them to gauge well-rounded experiences of the day-to-day activities on the ward. It enabled them to gain a deeper understanding of how the ward worked and how implementing wristband scanning would better support performance and improve patient safety.

At this point, training was key. Each of the trainers spent a lot of time with the clinical staff to make sure they were comfortable with the equipment and process, and that they had a good understanding of why the change had been made. This was a critical factor as part of the project execution.

Challenges

In spite of this, as with many new implementation projects, the initial phase did not pass without its challenges.

For longer-stay patients for example, wristbands would naturally become worn making it impossible to scan the barcodes, or sometimes, to read the human-readable information such as the NHS number or patient name. This was promptly highlighted as an improvement area, encouraging staff to perform standard wristband checks weekly to manage wear and tear requirements.

Unfortunately, this meant that staff would be required to print new wristbands in order to complete patient observations which was initially met with some resistance. Since not everyone had access to be able to print new wristbands this added an extra layer into the work process which left some staff frustrated and reluctant to embrace the change.

Usually, reluctance can be identified as one of two things – time and fear, and in this instance the challenge was down to time pressures.

Often a staff member would need to conduct observations for half of the patients on any given ward several times a day. Many were not trained to, or had access to, be able to print the wristbands themselves and had to rely on the ward administrator to do so. Not only was this inconvenient, but it slowed down the process in the first instance.

Patient safety first

Perception soon began to change when staff began to recognise the benefits – patient safety being one of the most pertinent examples.

On one particular occasion while performing routine patient observations, a health care assistant (HCA) had scanned the patient wristband to capture the results in the patient record. However, each time the wristband was scanned it failed to work. It became evident that it was not working because it was the wrong patient wristband scanned which therefore, could not be matched to the patient record.

This presented a prime example of prevention of an unwarranted error – a key patient safety benefit.

For patients this was positioned as an additional patient safety initiative. All patients were engaged at the point of admission, advised of the reasons why the ward was using point of care scanning and the benefits, providing them with greater peace of mind.

Once the patient safety aspects had been addressed, the project team introduced location scanning into the process. This is where GS1 Global Location Numbers (GLNs) – unique identifiers to differentiate between locations levels and types – were integrated to be captured at the point of care.

By additionally capturing the location in patient record, clinical staff would be able to achieve full real-time visibility of where patients are at various touchpoints throughout their care journey. This would prove hugely beneficial for the effective management of transfers of care.

Traceability and efficiency benefits

Scan4Safety does not take long to do. Once the equipment, systems, and processes are in place, significant amounts of time can be released back to care.

Under traditional circumstances, it would take a ward administrator 10–15 minutes to transfer a patient onto a ward. This would include locating the patient on the patient administration system (PAS), processing the encounter and transferring the patient on to the ward's bed board. However, by the simple addition of scanning the GLN for the patient bed location alongside the wristband upon transfer, this can now be done in less than two minutes using Leeds' electronic health record system, PPM+.

To maintain accurate patient records, scanning the GLN has also become part of routine practice when conducting eObs, to enhance traceability.

For the clinical teams, this means that they are able to transfer patients without needing to rely on a ward administrator. For transfers that occur out of hours, or around holiday periods such as Christmas where there are usually staffing challenges, clinical teams can now process transfers with ease themselves. There is no need to wait for the transfer to be completed at a later stage – eObs and medications can be continued without causing delays to patient treatment if they are not transferred to the ward in a timely manner.

The data insights gathered for the audit trail is also advantageous. Now, instead of searching through manual records to pinpoint timelines, the patient care journey can be tracked and traced via the digital patient timeline. Although at this stage it is not fully complete with other areas such as theatres for example, it still makes a substantial difference towards enabling full traceability.

For the admissions, discharge and transfers (ADT) process this has also been a welcome development for clinical staff. Originally the ADT eLearning would take a clinician up to 2.5 hours to complete and now Leeds have successfully managed to reduce this to approximately 30 minutes.

"The S4S programme has many benefits at the clinical level in our organisation, however, the patient safety element is key. Being able to track individual patient's locations and movements throughout their journey improves safety and contributes to safe and effective placement of patients. Accessing individual patient's electronic health record at the bedside via scanning the wrist band saves staff time, but significantly improves patient safety and reduces risk and harm."

Jack Whittle, CCIO, Leeds Teaching Hospitals NHS Trust

Impact throughout the pandemic

Throughout the pandemic the real benefits have come to fruition. For any patients that had been transferred, Leeds was able to successfully track any patients that had tested positive for COVID-19 in order to minimise risk to other patients and better protect their workforce.

As staff were scanning both the patient wristband (GSRN) and the locations of where the patient had been (GLN), they had a real time, live, audit trail of the patient where the patient had been as an effective infection control measure. The pandemic made staff even more aware of how important it is to scan which has been invaluable to the trust.

Next steps

The project team next plan to expand the use of the PPM+ software to theatres which is one of the main priorities following completion in the intensive care units (ICUs) and high dependency units (HDUs).

A virtual ward would need to be set up for this process so that a patient being transferred to theatres would stay on the ward's electronic whiteboard but also show on the theatres/endoscopy board. This way the patient would display as being physically in theatre but reserved in a bed on the ward to better manage patient flow.

A pilot has already been successfully conducted on the breast ward so patients can be tracked from the ward to x-ray, microbiology, theatres, recovery and back to the ward. It allows staff to give patient relatives real-time access to patient location information, and enables auditing and root cause analysis to be conducted on a patient care journey should any issues arise.

The team has successfully rolled out electronic capture of paediatric advanced warning scores (ePAWS) for observations and transfers on the children's wards and are working towards completing the full project implementation.