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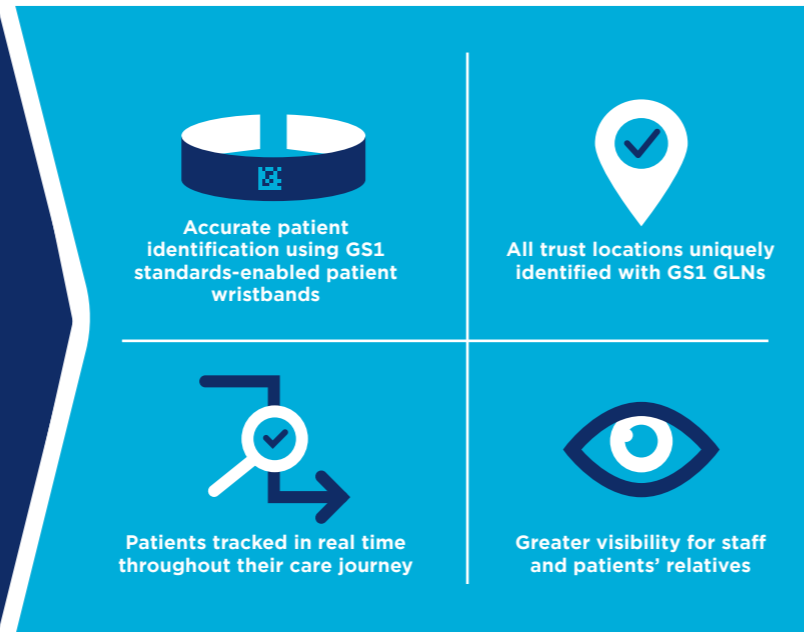
How positive patient identification can provide peace of mind for patients and their relatives

Challenge

Staff working on the breast ward at Leeds Teaching Hospitals NHS Trust (Leeds) faced numerous, daily calls from patients' relatives who wanted up-to-date care information about their loved ones. As a post-operative ward, having access to accurate information about a patient's status is invaluable for relatives. However, to get this information, staff had to call different wards and departments to check, each time an update was needed.

Approach

Using GS1 Global Service Relation Numbers (GSRNs) encoded in barcodes on patient wristbands, as well as GS1 Global Location Numbers (GLNs), staff are now able to link accurate location information for each patient to the electronic patient record (EPR). With GS1 standards, details about a patient's status can be provided in real time, making the right information easily accessible to staff when needed—and to relatives when they call.



For the breast post-operative ward at Leeds, being able to provide patients' relatives with accurate information is a vital part of its daily practice.

Yet, it was a significant challenge for staff members to track and trace patients as they moved around a busy hospital between wards and different departments, such as x-ray, operating theatres and recovery.

The staff didn't have access to real-time information on a patient's location, so they had to call a number of departments to get updates.

Since Leeds had already implemented GS1 standards-enabled patient wristbands and GLNs to identify locations throughout the hospital, the trust decided to use these standards along with its EPR system to provide the visibility needed by staff.

Mark Songhurst

Keeping track of patients

Surgical procedures are not only stressful times for patients, but also for their relatives. And, some surgery recovery times take longer than others, varying significantly from patient to patient. During these recovery periods, the greatest comfort that can be given by staff to a patient's relative is accurate information on how the patient is progressing through the stages of surgery and post-surgical recovery.

Unfortunately, in most of England's NHS trusts, there's no easy way to track the location of patients that doesn't involve the staff making

numerous phone calls between wards and with relatives. Not only does this approach take a significant amount of time, it offers little reassurance to a patient's relatives at a very sensitive time.

Leeds wanted to change this situation. The trust decided to find a way to accurately identify and trace a patient's care journey throughout the hospital. For the staff, this would improve their visibility of a patient's progress and, in turn, allow them to communicate accurate information back to relatives in a timely manner.

Providing patient updates

Leeds staff were increasingly handling calls with queries from relatives about the status of patients. In fact, staff were spending more time tracking down patients than they were focusing on care.

For staff working on the breast surgical ward, once their patients had left the ward for pre-operative tests, procedures or surgery, staff were left with no visibility of where their patients were or when they were likely to return to the ward. Without this ability to trace a patient, they found it challenging to prepare for their eventual return.

This meant that staff had to put numerous calls into several wards and departments for updates on a patient's status—from whether

"they had arrived" to if their "procedure had taken place."

Patients' relatives would frequently call the ward to receive an update on their care, but with no oversight, the staff were unable to provide them with the information they desired.

Staff needed a solution where they would have access to real-time patient and location information—a system that would allow them to track and trace their patients' journeys once they had left the ward.

Rather than limiting their ambitions to a single ward and a limited patient population, Leeds wanted to provide an organisation-wide system that would help drive digital transformation throughout the trust.

"Scan4Safety will enable 24/7 tracking of our patients and allow our endoscopy, radiology and theatre teams to be as efficient as possible. It will give clinicians the ability to manage their patients more closely and safely."



was done using GS1 Global Location Numbers (GLNs) for hospital locations such as the ward, bed bay or even the patient bedside.

In doing so, Leeds was in a position to be able to accurately identify its patients in combination with any of the trust-wide locations. At any point where a patient was moved to a new location, the GLN would be scanned along with the GSRN on the patient wristband to provide an accurate patient status at all times.

David Berridge
Deputy Chief Medical Officer and Executive Sponsor Scan4Safety
Leeds Teaching Hospitals NHS Trust and West Yorkshire Association of Acute Trusts (WYAAT)



The breast surgical ward was chosen as the initial ward for the GS1 standards-based solution since it is a self-contained unit with its own operating theatres and recovery area. (From a trust's perspective, if the solution did not work on this ward, people could still walk around the corner and speak to each other.)

The trust decided to link the two GS1 identifiers—the GSRN for each patient and GLN for each location, and align them within the trust's EPR system. By doing this, Leeds was able to monitor the status of each patient and their movements throughout the care journey. Patients could be tracked from the ward, through to surgical preparation and recovery, and back again—all without the need to make phone calls.

Real-time patient care journey

As one of the six demonstrator sites in the Department of Health and Social Care's Scan4Safety initiative, Leeds was well positioned to implement a patient-traceability system as it already had GS1 standards in place. So, using GS1 identifiers encoded into barcodes, they were able to start developing their system.

The GS1 Global Service Relation Number (GSRN) was used to uniquely identify patients by encoding the identifier into a barcode on their patient wristbands, while the equivalent

To provide the necessary real-time access to patient information when needed, the trust synchronised its EPR system with the patient whiteboard at the ward's clinical station. Now, each time the individual patient record is updated with location information, the details are automatically updated in real time and uploaded directly onto the whiteboard. This provides staff with clear visibility of the information needed at a prominent location on the ward.

To take this system to other parts of the trust, the challenge has been to provide a nursing tool that could help with all situations. With this goal in mind, Leeds has been working to assign a GLN to every bed space in the hospital.

With more than 2,000 treatment locations, this has proven to be a painstaking task. Using the GLN and GLN extension AI, the trust has identified all treatment spaces in the organisation – even where there are multiple spaces in the same room.

In addition, the trust's digital and informatics teams have enabled the in-house electronic health record (EHR) and PPM+, the trust-wide hospital EPR, to read the GLN and its extension, and for the local electronic whiteboard to be updated.

The team is commencing a pilot phase with a system that will free up time for both clinical and nursing staff, allowing the same process that changes the whiteboard to update the patient administration system.



The EPR is specific to the patient's care within a single setting such as in hospital. The EHR is a larger cross-organisational record of all of the patient's care, and includes details from multiple care sectors –from the hospital, community and social care.

The GLN extension AI (application identifier) enables the identification of a physical location using a data carrier present at the location itself, AI (414) physical location or AI (254) GLN extension component.

PPM+ is Leeds' trust-wide hospital EPR which captures information into the patient record from all aspects of the patient's care, such as clinical letters, radiology results and pharmacy. It connects at regional level to the Leeds Care Record that links up with wider patient information from social care, mental health and the patient's doctor records.

“Taking the time to fully understand the potential of GLNs in the organisation (and not make rushed decisions) has allowed us to build a strong dataset that enables patient tracking in real time.

The benefits that we are exploring include:

- *Clinical staff knowing the location of their patients at all times*
- *Provision of a 'live bed state' for the organisation*
- *Ability to track patients who have been treated in the same space, at the same time*

All of these have a great impact on the safety of patients. Thanks to the work of the digital and informatics team here at Leeds, we are making world-leading changes to the benefit of our staff, clinicians and, most importantly, our patients and their relatives and carers.”

Mark Songhurst
Project Manager, Scan4Safety
Leeds Teaching Hospitals NHS Trust



Full visibility of the patient care journey

With patient location information readily accessible in real time, the Leeds staff now have full visibility of each patient's care journey.

In the initial weeks, they experienced a reduction in the volume of calls to the ward from relatives. And, because the staff have a better idea of the timing associated with a care journey, they are able to provide well-informed estimates as to when patients will be out of recovery, are able to take calls or when they are back on the ward. In turn, this helps to reduce the volume of internal calls between wards and departments.



The traceability provided also enables the staff to be much more equipped to prepare ahead of time for anything that patients might need for post-operative care.

While financial savings are difficult to track, patients report that they feel the staff are providing a better level of care. Nursing and theatre staff are able to be more proactive in planning. Patients' relatives are reassured when contacting the ward for updates. Now, staff at Leeds can provide the same level of exemplary care and information they give to their patients to their patients' relatives.

Operational efficiency has dramatically improved for the ward staff since they can more easily check a patient's status. And, it is this efficiency that enables them to provide patients' relatives with greater support.

Locating all patients 24/7

The trust is continuing to make improvements to the traceability system. It is rolling out the transfer of patients using the GLN, which speeds up the nursing process by combining data with care at bedside. This new process also ensures that the trust knows the location of all of its patients—a goal that is aligned with Scan4Safety's 24/7 aspiration.

Using the data provided by GS1 standards, the digital and informatics teams are rapidly building a “live bed state” for the organisation—a real-time bed status that no longer relies on manual intervention.

As knowledge of how GLNs can be used increases, Leeds is also exploring the tracking of patient data and potential sources of cross infection.

About the author



Mark Songhurst
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Mark Songhurst has worked in England's NHS for 20 years. For the past three years, he has been a workstream leader and is currently project manager for Scan4Safety at Leeds Teaching Hospitals NHS Trust. Having worked for 13 years in the internal audit organisation, he has an in-depth understanding of the processes across the hospital that help to deliver good patient care.

Mark Songhurst is also a Future-Focused Finance Value Maker and a School of Health and Care Radicals Change Agent. He is extremely passionate when it comes to working with people and understanding how they can collaborate across the NHS to make lasting changes on services provided to patients. He was awarded the Future-Focused Finance Award by the Healthcare Financial Management Association in 2018, in recognition of his work at local, regional and national levels to improve NHS Finance.

His willingness to accept change, to walk alongside NHS staff of all levels and enabling them to engage with change and try something new, is helping drive the Scan4Safety project forward at Leeds.

About the organisation



Leeds Teaching Hospitals NHS Trust is one of the largest teaching hospitals in Europe. The trust is a regional and national centre for specialist treatment, a world-renowned biomedical research facility, a leading clinical trials research unit, and also the local hospital for the Leeds community.

It is one of the largest and busiest acute hospital trusts in the UK and is also one of the largest employers in the Leeds region with over 18,000 staff. The work they do serves to support the health and well-being of the community by playing a leading role in research, education and innovation.

The trust operates on a budget of £1.3b, providing local and specialist services to its immediate population of 770,000 and regional specialist care for up to 5.4m people.

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