



Case study

Airedale NHS Trust implements GS1 bar codes on patient wristbands to deliver the right treatment to the right patient

Airedale NHS Trust has followed national guidelines for patient wristbands from the National Patient Safety Agency's Safer Practice Notice (SPN) by implementing a system that not only identifies patients at their bedside but will in the future ensure accurate labeling of blood samples and also medication prescribing.

Background

Airedale NHS Trust provides acute, elective and specialist care to a population of over 200,000 people from a widespread area covering 500 square miles within Yorkshire and Lancashire. The trust treats 25,000 inpatients, 22,000 day cases and 104,000 out patients every year. Its A&E department treats over 47,000 patients and 2,300 babies are born in the hospital each year. For the second time in three years, it has been named 'Small Trust of the Year' in the Dr Foster Hospital Guide which identifies and analyses performance across the English NHS against selected indicators.

Standardising wristbands to improve patient safety

Between February 2006 and January 2007, the NPSA received 24,382 reports of patients being mismatched to their care. It is estimated that more than 2,900 – or 12% - of these are related to wristbands and their use.

NPSA's SPN No.24 provides guidance for a standardised patient wristband throughout the NHS in England and Wales. The notice calls for all NHS organisations that use patient wristbands to only use wristbands that meet the NPSA's design requirements and to include the following core patient

identifiers: last name, first name, date of birth and NHS number by 18 July 2008.

The guidance states that wristbands should allow the incorporation of new technologies that may be used to assist patient identification e.g. RFID tags or bar code technologies, whilst still fulfilling NPSA's requirements. In addition, by 18 July 2009, all NHS organisations that use patient wristbands should generate and print their wristbands from hospital demographic systems, such as a Patient Administration System (PAS). Printing should wherever possible be at the patient's bedside or next to the patient (i.e. not done in advance of the patient's arrival).

The Department of Health also recommends that the GS1 coding system should be adopted throughout the healthcare system in England, both for manufactured products and for coding systems used within healthcare settings, including patient identification codes on wristbands.

Implementing GS1 standards

To comply with the NPSA's requirements and meet the deadline for the adoption of standardised wristbands, Airedale NHS Trust has started implementing GS1 DataMatrix bar codes on its patient wristbands in 27 wards.





The GS1 DataMatrix bar code contains a unique GS1 identifier - GS1 Global Service Relation Number (GSRN) - that carries the patient's standardised identifiers including the NHS number and hospital number information which is linked to the hospital's PAS system. The patient's hospital number information is included in the bar code to act as a back up identifier in case the patient's NHS number is unknown. The GS1 identifier is unique to each patient and will allow medical staff to check and validate the correct administration of medical treatment with a simple scan of the bar code on the wristband.

The implementation project started in July 2008 with the gathering of requirements and submission of the business case. The project tender was sent out in September 2008 and those received were scored according to the Trust's requirements. The two leading companies visited Airedale to provide a demonstration to staff before a decision was made.

Airedale carried out a two week trial in two locations (ward and theatre) within the hospital in January 2009 before full implementation. The project is now live with almost all 27 hospital wards using GS1 bar coded wristbands.



The first phase of the project focused on getting the correct GS1 bar coded information on the wristband. Phase two will link the patient's unique GS1 identifier with the trust's pathology department providing traceability of blood samples. It will also be utilised in the prescribing of medication.

The process

On admission to hospital, the nurse will use a mobile wristband cart at the patient's bedside to locate the patient's details on the patient administration system (PAS). Once the information is checked with the patient, a bar coded wristband is printed. In addition to the GS1 DataMatrix bar code, the patient wristband also includes standardised human readable identifiers - first name, last name, date of birth and NHS Number. Following local trust agreement, Airedale has included the first line of the patient's address and their hospital number.

"The addition of the hospital number was included at the request of the clinical staff who want to be able to utilise the bar code link in with pathology and pharmacy systems. Initially pathology will only use this bar code when taking blood samples," says Nicola Catto, IT Project Manager at Airedale NHS Trust. "This involves the phlebotomist scanning the bar code on the patient's wristband at their bedside using a mobile unit which is linked to the hospital's network. The phlebotomist will then be able to view what tests have been requested at the patient's bedside. Once the patient is bled, the phlebotomist will print a blood sample tube label with

the patient's bar code identifier. This reduces the risk of the sample being incorrectly labeled or misread due to handwriting".

"We intend to use GS1 bar codes on patient wristbands to ensure positive patient identification, and retrieve the blood tests requested on that patient to a portable device. This will improve the safety and efficiency of the phlebotomy process," says Stuart Hopkinson, Airedale NHS Trust's Pathology IT/Computer Manager.

Airedale's bar coding system uses a Zebra HC100 printer-based solution provided by integration specialist Dakota which formats the GS1 DataMatrix bar code wristband layout to comply with NPSA guidelines and integrates with the trust's PAS. The Dakota-Zebra printed wristband solution has already been adopted by two other hospitals, Lancashire Teaching Hospital at Preston and Chorley, and University Hospitals of Leicester NHS Trust, both of which were contacted by Airedale as part of its due diligence process.

Coding benefits

The use of standardised wristbands was advised by the NPSA as a result of concerns over the use of handwritten wristbands, where names were difficult to read, or the information was unclear and could cause errors. Airedale NHS Trust has followed the NPSA's advice because it agrees that non-printed wristbands represent a safety concern.

"By adopting GS1 standards, the trust is able to positively identify its patients and ensure the safe labelling of blood samples and the prescribing of medication through the use of standardised information for identification," says Nicola Catto.

Conclusion

"By adopting GS1 bar coding on patient wristbands, we are using standardised identifiers which can then be applied to other services used in hospital by the patient where that identification must be relied on, such as the taking of blood, or the prescribing of medication," says Nicola Catto, IT Project Manager at Airedale NHS Trust.

"The benefits of this system are most importantly, patient safety, and its ease of use. We currently have all of our hospital departments using GS1 bar coded wristbands in compliance with NPSA's guidance."

Patient safety is currently at the top of the agenda for the NHS following the Department of Health's 'Coding for Success' policy recommending the use of GS1 standards. Hospitals are under increasing pressure to automate their processes to reduce the occurrence of human error and increase efficiency. GS1 UK has provided on going support to Airedale Trust to help them get the most out of bar coding technology.