



# Case study

Wythenshawe Hospital implements GS1 bar coding to uniquely identify, track and trace surgical instrument trays

Wythenshawe Hospital have implemented a bar coding system using GS1 standards to uniquely identify, track and trace its trays containing surgical instruments. This system was implemented following the centralisation of decontamination services by five hospitals from four acute NHS trusts including Wythenshawe Hospital into one new facility run by Synergy Healthcare plc.

## Background

The University Hospital of South Manchester is a major acute NHS Teaching Trust located in the South of Greater Manchester providing general and specialised services to a population of 570,000 people. The Trust's largest acute site is Wythenshawe Hospital. The hospital handles approximately 69,000 surgical operations every year with 85,000 surgical instrument trays used at its site for a wide variety of specialty services such as plastic surgery and burns.

## The project

The Department of Health (DOH) National Decontamination Programme, launched in 2003, has been encouraging NHS Trusts to work together to develop a shared sterile services solution for their area. Effective cleaning and sterilisation of surgical instruments represents an essential service for the efficient running of many NHS establishments. The programme has been working closely with NHS Trusts in England to provide guidance and training on standards and best practice for the decontamination of surgical instruments. As part of the programme, the DOH aims to set up new supercentres throughout England to centralise decontamination services.

In parallel to this project, the DOH recommends that NHS hospitals code their surgical instruments and trays using the GS1 System of standards.

Following recommendations by DOH, University Hospital of South Manchester NHS Foundation Trust together with North Cheshire Hospitals NHS Trust, Christie Hospital NHS Trust and Trafford Healthcare NHS Trust have worked together to set up a centralised decontamination facility (supercentre). The new facility, a joint venture with Synergy, was opened on 5 November 2007, with Wythenshawe Hospital as the first customer. The remaining 4 hospitals completed their transition to the new service on 11 February 2008. The decontamination facility has the ability to process 268,000 DIN sterilisation baskets each year and it is GS1 standards compliant.

## Preparation before implementation

Before Wythenshawe Hospital were able to start implementing the GS1 System, the hospital needed to prepare its staff for the transfer of services; ensure that hospital theatre staff understood the new process; set up and create receipt and dispatch points for its surgical instruments; write communication procedures and protocols and; review and submit the trusts' audit of trays specification.

The Trust's IT department also needed to be engaged in the process to take ownership of its responsibilities on issues such as internet restrictions (firewall) and testing to prove the IT systems can work with the new process in place.





In the run up to implementation, Synergy and the hospital also provided training for staff on the importance of scanning and tracking surgical instruments and on the implementation process.

Logistics staff needed to be trained on receipt and dispatch logging whilst, the hospital's service users needed to be able to search for their products and produce reports using Synergy's on-line track and trace system.

### GS1 implementation

The Trusts involved used a locally adapted output specification, based on a template supplied by the National Decontamination Team, to procure the new joint venture service. As part of that specification, the GS1 coding system was required. The Trusts and Synergy, the service provider, registered with GS1 UK for their allocated numbers.

A system for allocating the correct GS1 codes was needed. Synergy and the Trusts agreed a method that would ensure that duplicate numbers were not used when assigning asset numbers to trays and instruments. This was appended to the Output Specification. Each unique tray or instrument number was constructed of the GS1 company prefix number and the unique item code allocated by Synergy.

Wythenshawe hospital needed to make sure that all its trays and supplementary instruments were GS1 coded before the decontamination facility started its operations. Over 2,500 trays needed to be coded and affixed with new GS1 bar code labels.

It is important that hospitals determine the specifications for all its trays. Wythenshawe ensured that the attributes and specifications of each tray were standardised and accurate to be able to track and trace efficiently. The information about each tray, such as the GS1 bar code number, asset sequential number and the item's attributes, were entered into Synergy's track and trace system and verified.

### The process of coding and decontamination

The surgical instruments are used in Theatres and once checked and counted by the scrub nurse, placed onto a trolley on the used equipment corridor at the back of Theatre. The bar code identification label for each tray is contained on a clip board on the trolley. The delivery and collection staff collect the trays and scan the trolley into the hospital's hub. They then scan each bar code label into the on-line track and trace system which records the contents of each trolley and that the instruments are ready for collection by Synergy staff.

Synergy staff collect and scan the trolley containing the trays from the hub to verify the collection time and driver's details. Synergy has been contracted to service the hospital's trollies within 8 hours therefore it is important that the collection and delivery times are verified effectively. If the trays are not decontaminated within the specified times, the company could be penalised by the hospital.

Once the trolley arrives at the Synergy facility, it is scanned to verify receipt and unloaded. The trays and instruments are then unwrapped and scanned to check against the hospital's tray content sheet sent with the trolley. Each tray is allotted to a washer and the bar code scanned as it goes through the process. After the washing process, the items are scanned again in the clean room, once checked and counted twice.

Each tray is then packed according to a complex prioritisation system that ensures that all items are processed and returned within the required turn around times. After packing, the trays are scanned in and out of the autoclave to identify the machine cycle that the equipment is processed in. The decontaminated trays and instruments are issued to the hospital's trolley and scanned for release to the customer. A delivery note is produced by Synergy to be sent together with the trolley to the hospital.

A Synergy driver takes the trolley to the hospital and scans it into the delivery hub to verify the delivery time. The Trust delivery and collection staff review the returns against the delivery note. Once the Trust staff check and approve the trays, they deliver the equipment back to the theatres that use the specific tray and attach the bar code identification label to the patients notes and register should there need to be a recall of the items used on that patient and any previous or subsequent patients.

### Coding benefits

Since the GS1 coding system has been implemented, the hospital has already benefited from faster and easier traceability where trays can be tracked back to ensure that it has gone through the full decontamination process. This can be done by checking the bar coded label appended on the patient record by the scrub nurse after the operation at the theatre.

Coding also enables the traceability of decontaminated instruments used on patients in the unlikely event of a recall procedure. Historical information on individual instruments can be built up and stored electronically.

Using the GS1 standard, all trays are uniquely coded, helping to ensure that inventory is correctly returned to the right hospital and delivery/use point, for e.g. a specific theatre or ward. All trays and supplementary instruments have unique identifiers that include the hospital's GS1 customer prefix. Used in conjunction with Synergy's tracking system, this provides traceability throughout the cycle of use, decontamination, cleaning, assembly, sterilisation and delivery.

The verification of tasks facilitated through coding, such as the checking and counting of instruments, provides assurance to the hospital that all surgical instruments that belong to a specific tray are present and ready for the operation.

### Conclusion

*"Having properly decontaminated and sterile surgical instruments for an operation is an obvious requirement, but tracking using a standardised coding system, is essential to allow traceability from one patient to another in the unlikely event of a recall procedure," says Caroline Robinson, Customer Contract Manager at Wythenshawe Hospital. "Rescheduling operations due to missing or unsatisfactory surgical instruments not only presents a potential threat to the patient due to be treated, but has a much wider impact both on the smooth running of a hospital department and its budget."*

Hospitals are under increasing pressure to automate, modernise and update the provision of sterile services within the entire NHS. Following the DoH's decision to recommend GS1 standards, hospitals are working together to develop a shared sterile service solution using GS1 coding. GS1 UK has provided on going support to Wythenshawe Hospital, providing assistance with the implementation of GS1 standards and coding within its facility.