

## Inventory management

# North Lisbon Hospital Centre optimises logistics for quality of care

The North Lisbon Hospital Centre wanted to optimise its logistics processes and more easily comply with the regulation requirements of INFARMED, Portugal's government agency responsible for regulating all activities related to medicines and health products. As a first step, the logistics department assessed its suppliers' use and associated quality of barcodes printed on medical devices and other products. Based on survey results, the North Lisbon Hospital Centre is now transforming its operations, working closely with suppliers to use GS1 standards that uniquely identify incoming products. To date, it has realised significant benefits for ease of compliance, traceability, improved productivity and reduced costs.

*by Nuno Loureiro*

CENTRO HOSPITALAR  
LISBOA NORTE, EPE



HOSPITAL DE  
SANTAMARIA



Hospital  
PulidoValente

## Background

In 2008, North Lisbon Hospital Centre (Centro Hospitalar Lisboa Norte or CHLN) was formed when two hospitals—the Santa Maria Hospital and Pulido Valente Hospital—came together. Today, CHLN plays a vital role of providing healthcare services with its more than 1,100 beds, 6,300 employees and 29,500 surgeries each year. Part of the University of Lisbon's School of Medicine and Portuguese National Health Service, CHLN integrates pre- and post-graduate training into its operations and leads critical research and innovation initiatives.

## Innovation in logistics

At CHLN, its logistics services group also leads with innovative practices. Nuno Loureiro, Director of Logistics for CHLN, heads the team responsible for end-to-end management of 2,200 types of medical devices used by the hospital. As a logistics professional in healthcare, Loureiro fully appreciates how highly efficient processes can have a positive impact on patient care and safety.

“With the consolidation, we needed to find new ways to streamline our processes and control costs,” says Loureiro. “At the same time, we wanted to look for new ways to raise the level of service provided to our clinical services clients.”

“With GS1 standards, our ultimate goal is to achieve full traceability of products. In turn, we can help ensure safer care for our patients.”

A major goal for CHLN logistics included the adoption of global standards to help optimise the flow and processing of data along the supply chain and enable a much faster and accurate recall process. The department also needed to comply with INFARMED regulatory requirements for reporting the purchase and consumption of medical devices—as efficiently as possible.

“With GS1 standards, our ultimate goal is to achieve full traceability of products,” adds Loureiro. “In turn, we can help ensure safer care for our patients.”

## All barcodes are not equal

Taking a disciplined approach, CHLN structured its standards project to include five phases—from discovery to implementation. GS1 Portugal, working closely with CHLN, supported the project throughout all phases.

CHLN developed a structured project plan to assess the use of barcodes and support suppliers in the adoption of GS1 barcodes.

Starting in September 2014, the department approached 21 suppliers of medical devices and consumables, selecting 40 products based on their high turnover. Cartons as well as packages were analysed based on suppliers’ use of barcodes, the use of GS1 barcodes, and the accuracy of coding.

The results showed that 72 percent of analysed units had barcodes—81 percent of the cartons and 60 percent of the packages.

In addition, 81 percent of all barcodes were based on GS1 standards. Yet, only 18 percent of these GS1 barcodes were executed accurately and in compliance of GS1 requirements.

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**81%**

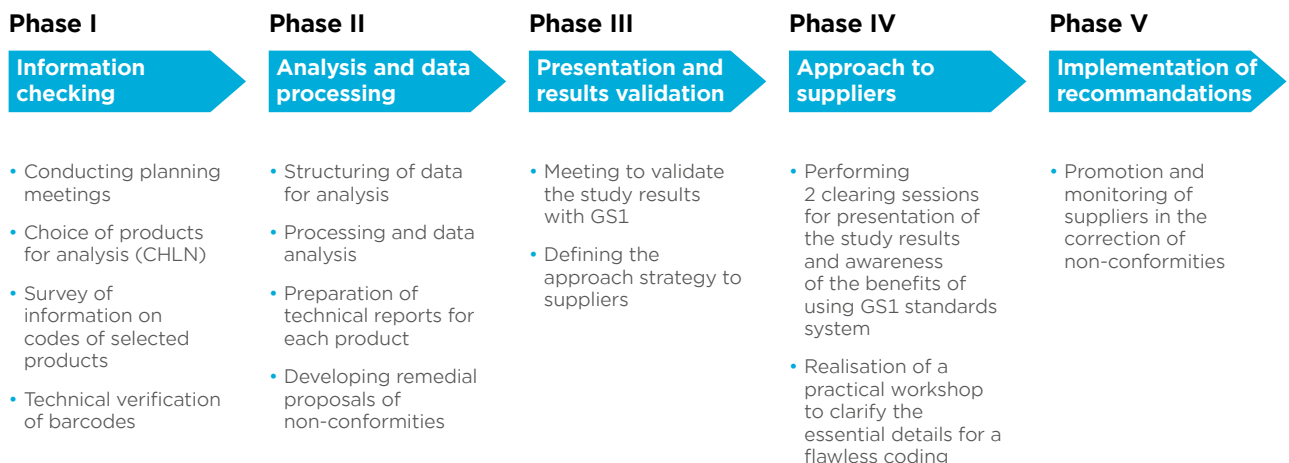
of all barcodes were based on GS1 standards.



## Project methodology



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A unique Global Trade Item Number® (GTIN®) would be used to identify each item with the lot/batch and expiry date encoded in the package and carton's barcodes, which would then be scanned at the point of reception in the CHLN warehouse. Product data captured in the barcode would be used to identify the item as it traveled from warehouse storage to other supply locations, and ultimately to the patient's bedside.

**“The results from all surveys, confirmed our strategy to use GS1 standards—for the benefit of our hospital operations and in compliance with INFARMED regulation.”**

### Expanding discovery

CHLN decided to expand the survey to include all of its suppliers. Working with 133 suppliers, the project team analysed the use of barcodes on cartons and packages of 225 different items from four categories: medical devices, medical supplies (e.g., scrubs), dietary products and office supplies.

Results showed that 71 percent of products were labelled with barcodes and 80 percent of these were GS1 barcodes.

However, only 37 percent of these GS1 barcodes were accurately represented. Examples of non-compliance included: the batch numbers and/or expiry dates were not in the barcode; the expiry date was not specified in the human readable element; and the barcodes were not readable.

In parallel with this survey, another CHLN work effort analysed the use of GS1 standards for the traceability of cardiology medical devices. The sample size was extensive with representation of 750 types of medical devices from 15 suppliers. The vast majority—98.5 percent—of medical devices used GS1 barcodes accurately with GTIN, lot/batch and expiry date information provided.

“We were pleased but not surprised about the widespread and accurate use of GS1 standards,” says Loureiro. “Many of our medical device suppliers are U.S. and European companies that use GS1 barcodes in compliance with the U.S. FDA’s UDI regulation. The results from all surveys, confirmed our strategy to use GS1 standards—for the benefit of our hospital operations and in compliance with INFARMED regulation.”

### Transforming processes

Today, CHLN is taking steps to transform its logistics processes with GS1 standards. As medical devices enter the receiving area, barcodes are scanned to read each product's GTIN and other data. As medical devices travel from warehouse to clinical services to patients, they are tracked via scanning the GS1 barcode at each point.

“The ability to track and trace medical devices will significantly help us improve our recall process,” says Loureiro. “We have also adapted our IT system to match the GTIN with the national medical device code assigned by INFARMED in a one-to-one relationship. Now, we can more easily, and in much less time, generate the report that shows INFARMED our procurement and consumption of all medical devices.”

As part of its implementation, CHLN is also working with suppliers to create greater awareness of GS1 standards and provide training about how to properly use them. “GS1 helped us organise and educate our suppliers about standards,” says Loureiro. “I was personally involved in the training sessions with suppliers to communicate and stress the importance of using global standards.”

The response rate has been impressive with 47 percent of all CHLN's suppliers attending the sessions. As important, suppliers are now taking steps to make changes to accurately assign and apply GS1 barcodes on cartons and packages. “We will continue to work with suppliers since using standards delivers mutual benefits for us, them and our patients.”

The use of GS1 barcodes reduces stock level by

**20%**

for approximately

**€1.5**

million in inventory cost savings.



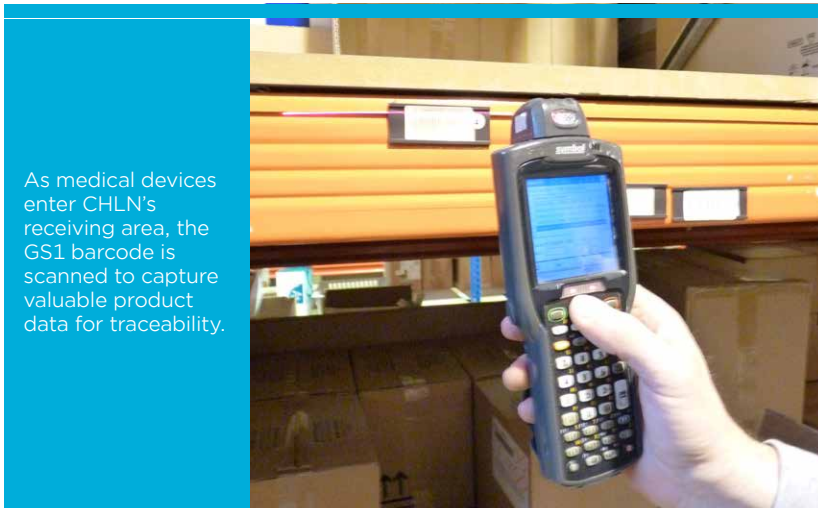
## Cost control with no compromise on quality

Automating the product receiving process has already produced tangible results for CHLN: time savings, productivity improvements, increased available product information and stock reduction.

The receiving process now takes 60 percent less time with instantaneous data capture via GS1 barcodes. This is an estimated potential savings of 49 days annually for warehouse personnel—time that they can redeploy for other strategic work. Since using GS1 barcodes, stock levels have also been reduced by 20 percent for approximately €1.5 million in inventory cost savings.

CHLN is also targeting increased efficiencies in its order-to-cash process along with a reduction in stock obsolescence. And as more and more product data is captured via GS1 barcodes, CHLN expects to significantly reduce—nearly eliminate—medical errors due to inaccurate or incomplete product information.

“Like many hospitals, we need to control our costs, yet we will not compromise the quality of care for our patients,” says Loureiro. “With GS1 standards, we can achieve both . . . at the same time.”



As medical devices enter CHLN's receiving area, the GS1 barcode is scanned to capture valuable product data for traceability.

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### About the Author



**Nuno Loureiro** is Director of Logistics at the North Lisbon Hospital Centre in Lisbon, Portugal. He is also a member of the Ministry of Health's Working Group that is implementing the methodology for the preparation of Sustainability Reports as part of the Global Reporting Initiative. Loureiro is a

member of the SiNATS forum, a discussion forum for medical device evaluation. He is a frequent guest speaker about logistics and operations management, warehouse management and hospital logistics as part of post-graduate studies in Biomedical Engineering of Technician Higher Institute and Health Services Management of Lusida University. Loureiro has published two articles in *Modern Logistics Magazine*: “Hospital Logistics in Context” and “Warehouse Centralization.”

### About the North Lisbon Hospital Centre

The Centro Hospitalar Lisboa Norte (North Lisbon Hospital Centre or CHLN) was created in 2008 when the Santa Maria Hospital and Pulido Valente Hospital merged. Today, the hospital provides a broad set of healthcare services with specialisations in cardiology, obstetrics, gynecology, oncology, neuroscience and more. With state-of-the-art facilities and 6,300 dedicated caregivers, CHLN performs an estimated 29,500 surgeries each year and cares for more than 43,000 out patients. Part of the University of Lisbon's School of Medicine and Portuguese National Health Service, CHLN integrates pre- and post-graduate training into its operations and leads critical research and innovation initiatives.

[www.chln.min-saude.pt](http://www.chln.min-saude.pt)