

Healthcare provider implementation

Imbanaco Medical Centre takes patient care and safety to the next level with traceability

Since 2014, Imbanaco Medical Centre has used GS1 standards to simplify and automate its clinical processes for increased efficiencies in its operations and enhanced patient safety. The hospital has launched several initiatives focused on ensuring the traceability of medicines, medical devices and other supplies—from receiving products in its central warehouse to dispensing medications at patients' bedsides—to reduce risks and errors. With its automated inventory management system, Imbanaco Medical Centre continues to assure a high-level of patient care and compliance with the patient rights of medication administration.



By José Luis Sabogal

Traceability as a priority

Imbanaco Medical Centre opened its doors to the community of Cali, Colombia in 1976. This state-of-the-art hospital has 380 beds and provides healthcare services for approximately 1.5 million patients per year. In 2016, Imbanaco Medical Centre received the “Safest National Hospital Award” for the fourth year in a row and was recognised as one of the 13 best hospitals in Latin America, according to rankings published in the *América Economía* magazine. One of its primary goals is to continually evaluate and adopt technologies and innovative practices to ensure a high-level of care for its patients.

Based on its Patient Safety Program, Imbanaco Medical Centre prioritises “patient safety” throughout its operations in compliance with the eight rights of medication administration: the right patient, medication, dose, route, time, documentation, reason and patient response. “Using GS1 standards has enabled us to transform our processes throughout the hospital with patient safety in mind,” says José Luis Sabogal, Manager of Systems and Telecommunications.

From dispensing and administering medications to patients to performing medical examinations and surgical procedures, the unique identification of single-dose medicines, medical devices, supplies and surgical instruments helps Imbanaco Medical Centre manage all aspects of patient care.

If not source-marked by its suppliers, Imbanaco Medical Centre assigns a GS1 Global Trade Item Number® (GTIN®), along with a serial number, batch/lot and expiry information for each single-dosage of medicine and each medical device received into the central warehouse. The GTIN and other information is encoded in a GS1 DataMatrix barcode and applied to each.

“With this identification system in place, we can track products as they are used throughout the hospital and with patients as well as trace their origins back to each supplier,” advises Sabogal. “Some of our suppliers today are identifying their products with GS1 barcodes, and for products without barcodes, we re-label these products using GS1 standards to fulfil our commitment to patient safety.”

Automated inventory management

Once drugs, devices and supplies have been individually identified with GS1 DataMatrix barcodes, they are stored in one of two automated carousels or a fixed storage structure—assets that are also individually identified with standards—specifically Global Individual Asset Identifiers (GIAs) encoded in GS1-128 barcodes.

The central warehouse schedules dispatches of products to Imbanaco's Pharmaceutical Central Service, pharmaceutical services satellites and other venues throughout the hospital. As medicines and medical devices are requested by different services within the hospital, the central warehouse and pharmaceutical service sites can easily locate and dispense these products to multiple dispensing sites for immediate access.

“As medicines, devices and supplies are distributed and administered or used by patients, their barcodes are scanned at each point of service to track their locations and progress throughout the care process,” explains Sabogal. “This information is automatically integrated into our hospital's information system so that we have near real-time information and visibility into inventory levels.”

The replenishment of inventory is automatically performed as inventories reach pre-determined levels. “Based on our business process management platform, data analytics and business rules, we have automated the monitoring and management of our inventory so that patient care is not compromised,” advises Sabogal.



By using GS1 standards to identify a medication linked to a patient's electronic health records, it is possible to validate the five patient rights at the time medication is dispensed.

“Our goal is to make inventory always available to minimise or even eliminate delays in caring for patients. Requests for additional products are generated automatically and, if necessary, generate purchase orders for suppliers.”

Based on its automated inventory and ordering system, Imbanaco Medical Centre estimates a 25 percent reduction in inventory levels at its satellite pharmacies along with a 98 percent improvement in inventory shrinkage/waste.

Patient records and sterilisation

At the same time that product information is recorded in the inventory system, it is also recorded in patients' electronic health records and in Imbanaco's billing system for invoicing. When admitted to the Imbanaco Medical Centre, each patient is presented with an identification wristband with his or her own National Identification Number.

“At this moment, Imbanaco Medical Centre is in the process of migrating to the GS1 DataMatrix barcode, which allows us to identify the patient during hospitalisation and gives us instant access to the record of prescription drugs administered to the patient, the procedures performed, and upon discharge, compiles all charges for billing purposes.”

José Luis Sabogal, Manager of Systems and Telecommunications, Imbanaco Medical Centre

“During hospitalisation, the patient's identification in the DataMatrix barcode allows us to instantly access the record of prescription drugs administered to the patient, the procedures performed and, upon discharge, compile all charges for billing purposes,” says Sabogal.

Imbanaco Medical Centre advises that medication errors have virtually been reduced significantly. It is also efficiently capturing all relevant costs associated with care for improved billing and accounts receivable.



By scanning the GS1 DataMatrix barcode, a medication can be dispensed and tracked throughout the hospital to the point of administration to the patient.

Imbanaco Medical Centre advises that the time needed to create an invoice for each patient has been reduced by 35 minutes to 18 minutes, improving cash flow by 55 percent. It is also efficiently capturing all relevant costs associated with care for improved billing and accounts receivable.

“By automating our processes, our caregivers can now spend more time with patients,” says Sabogal.

At its sterilisation centre, Imbanaco Medical Centre has optimised the flow of sterile processing of surgical instruments and non-implantable materials in order to maintain the highest standards of infection control.

“To achieve this, traceability is essential in the complex framework of a sterilisation centre,” explains Sabogal. “Previously, we tried to track each instrument manually, which was labour intensive and not very effective. Now, we have an automated traceability system based on the efficient use of information provided by GS1 standards encoded in GS1 DataMatrix barcode on each instrument.”

It is now possible for Imbanaco Medical Centre to efficiently and accurately locate each instrument in its traceability system—know which day it was used, who used it, what class of procedure was performed, and on what patient. And because each instrument is uniquely identified, Imbanaco Medical Centre can follow-up on the quality of materials and number of times used compared to the standards set by the manufacturer.

Moving forward

Imbanaco is currently working with GS1 Colombia to collaborate with pharmaceutical and medical device manufacturers and other suppliers to use GS1 standards in the identification of their products prior to shipment. “As more and more of our suppliers use GS1 standards, we will be able to save time, costs and gain efficiencies in our operations,” explains Sabogal.

Another current work effort is to enable entering standardised patient identification in support of patient transfer processes, with a GS1 identifier called a Global Service Relation Number (GSRN) encoded in a GS1 DataMatrix barcode, that would help with the electronic exchange of clinical history records and the receiving of patients outside of Colombia.

“We plan to find more ways to use GS1 standards that have a positive impact on our operations, our caregivers and, of course, our patients,” concludes Sabogal. “We will continue to move forward, making cultural and process changes within our health system that guarantee success.”



Each medical instrument is identified with a GS1 DataMatrix barcode for traceability through the sterilisation process.

About the Author



José Luis Sabogal is the Manager of Systems and Telecommunications at Imbanaco Medical Centre and has held this position for more than 25 years. He has actively promoted technological innovation that started with the development of the homegrown version of the SIAM ERP that today has enabled Imbanaco

Medical Centre to be a key leader in the implementation of cutting-edge medical technologies in the region. His vision of the future has positioned him as a leader of committees such as the GS1 Advisory Board.

About Imbanaco Medical Centre

Ranked among the top hospitals in Latin America, **Imbanaco Medical Centre** continuously strives to provide top-rate care for its patients as well as facilitating medical research. With 380 beds, this advanced hospital in Cali, Colombia provides healthcare services for approximately 1.5 million patients each year.

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Imbanaco Medical Centre Statistical Information

55% 

Creating a patient invoice has been reduced by 35 minutes to 18 minutes, improving cash flow by 55%.

98% 

A 98% improvement in inventory shrinkage/waste has been achieved based on automated ordering.



25% 

A 25% reduction in inventory levels at its satellite pharmacies has been achieved based on automated inventory management.

100% 

Order picking productivity in the satellite pharmacy has increased significantly.