

Costa Rica

National Children’s Hospital uses GS1 standards to improve efficiency in patient care

<p>Challenge</p> <p>The inventory the National Children’s Hospital were working with was identified in a variety of ways and their data was not being used efficiently. It was also being looked after by medical personnel who did not have training in the management of logistics processes.</p> <p>Approach</p> <p>Working with GS1 Costa Rica, the National Children’s hospital implemented GS1 standards and better logistical practices to bring innovation to their way of managing medical supplies and to initiate the automation of processes.</p>	<p>100%</p> <p>of medical supplies in the warehouse identified by GS1 standards</p>	 <p>Employees trained about GS1 standards and best logistics practices</p>
	<p>Planning system for care management defined allowing necessary supplies to be available for the timely care of patients</p>	 <p>Cleansing of the warehouse to remove expired products</p>



The National Children’s Hospital Costa Rica was inaugurated on May 4, 1964 with the mission to “contribute to improving the health of the child population of the country by providing specialised and emergency care through comprehensive quality services, effectively, efficiently, with equality of opportunity”. Since then, this noble institution has become the national standard for children’s care and backs this with ongoing research into how they can better the health of Costa Rican children and become more efficient in delivering patient care. As part of this, the Integral Care Unit for Burns (UCINQ), in the year 2018-2019, began implementation of automated management of inventory control for the medical supplies in their warehouse.

Olga Arguedas

Greater efficiency in resource management

Improving the management of medical supplies in UCINQ was the challenge, so that they could provide better quality service and greater patient safety through efficient resource management. The inventory they were working with was identified in a variety of ways and their data was not being used efficiently. It was also being looked after by medical personnel who did not have training in the management of logistics processes. Inaccurate controls and poor visibility of inventory caused problems such as shortages and expiration of products at all levels of medical care. This made it impossible for the unit to make timely decisions or to optimise the allocated budget.

The medical staff was dedicating a lot of time to completing administrative tasks inefficiently, which reduced the time available for patient care.

Manual processes that generated patient risks:

Expired / discontinued	34%
Without standard identification	20%

Note: Today the whole inventory is identified and suitable to be used.



Dr. Jaime Cortés Ojeda
Head of the surgery
National Children’s Hospital

GS1 standards and their integration with technology are our best ally in carrying out our philosophy of contributing to the improvement of the health of the child population in our country, through providing comprehensive quality services, effectively, efficiently, and for everybody.”

Automating safer processes using GS1 standards

GS1 Costa Rica, through its advisory service, recommended the implementation of GS1 standards and better logistical practices to bring innovation to their way of managing medical supplies and to initiate the automation of processes. The project was carried out in UCINQ, using the GS1 128 and GS1 DataMatrix data carriers as the foundations of the implementation.

The first step was documenting the technical requirements and the existing basic procedures, so that they could visualise the adjustments needed in the daily routines at UCINQ. Once this first step was agreed upon, support and training was provided by GS1 Costa Rica in order to build on the understanding of GS1 standards and their applications, within each of the new processes developed. In parallel to this, UCINQ worked with a software provider to roll out the recommendations agreed with GS1 and they were able to achieve automated management in the following processes:

1. Product identification.
2. Control of income, outputs, and physical inventory takings.
3. Control by lot number, expiration date, and purchase order.

The composition of the identification of products through the data carriers GS1-128 and GS1 DataMatrix was as follows:

DATA	AI
Product identification	01
Lot number	10
Expiration date	17
Purchase order	400



Dr. Cinthya Mora
Head of the reconstructive surgery service
National Children's Hospital

At the Children's Hospital, we are pioneers in innovation at a whole country level. Now we have a process that helps us in our administrative day-to-day, but the most important thing is that it assures us of the safety of the patient: we know we have the right patient, the right medication, the right dose, and the right method of administration at the right time."



GS1-128



GS1 DataMatrix

Benefits so far

- The inclusion of GS1 identification standards to 100% of the medical supplies in the warehouse.
- Definition of policies and work standards based on the management of the entry and exit of articles.
- Cleansing of the warehouse. This involved donating products that were not being used to other institutions, and a large number of expired items was discarded. Currently, 100% of the inventory of the warehouse consists of active medical supplies.
- Incorporation into the warehouse of technological devices (printer for labeling, computer, and telephone, etc.), and warehouse management software to perform tasks, and inventory entries and exits.
- Products stored in the warehouse that did not have identification were tagged and were adjusted to GS1 standards (internal work and with suppliers).
- Use and revenue policies restricted to the warehouse were established.
- A planning system for care management was defined, which allows the necessary supplies to be available, and more quickly, for the timely care of patients.



- Workers are trained in GS1 standards and best logistics practices for warehouses, as well as in the use of the information system. This allows for greater and more effective use of the data. Now there is logistic staff responsible with the guidance from nursing staff.
- At a general level, a culture was created focused on planning, policy compliance, maximisation of resources and use of technology. This provides greater patient safety by avoiding errors, and greater efficiency of the equipment, allowing the medical staff to focus on the direct care of patients.

Next steps

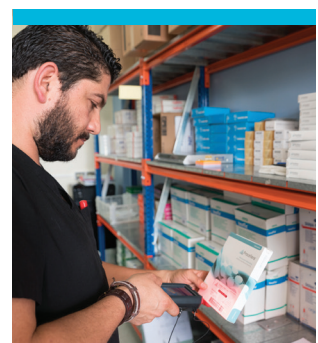
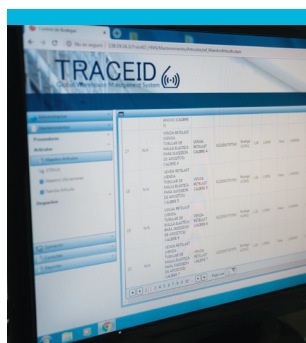
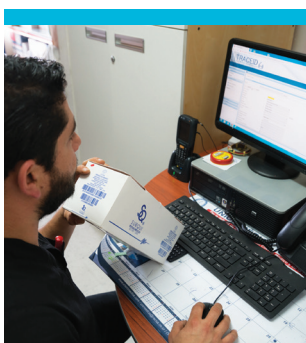
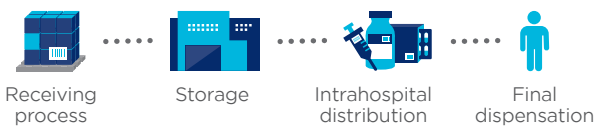
Work at the hospital continues to be exhaustive and is a daily challenge for all the personnel involved. Doctors, nurses, and administrative staff focus on meeting the five requirements for patient safety: correct product at the right time, in the right patient, by the right professional, by the correct route and in the correct dose.

Next steps in 2019 include:

- The generation of statistics and data that allows strategic decisions to be made.
- Visualisation of care costs per patient.
- Development of new approaches to personalized services.

In the medium term, the authorities intend to make a formal contract to replicate the model in all the warehouses of the hospital, starting with the stores of general surgery, anesthesiology, orthopedics, and odontology.

Project scope at Integral Care Unit for Burns (UCINQ)





About the author



Olga Arguedas
M.D. PhD. General director
National Children's Hospital

Dr. Olga Arguedas is the General Director of the National Children's Hospital in San José, Costa Rica. She received her medical degree from University of Costa Rica, Faculty of Medicine and her training in Paediatrics at the National Children's Hospital in Costa Rica. Then she obtained a Masters and a PhD degree in Paediatric Immunology at the University of Gothenburg in Sweden, with post-doctoral studies at the Gaslini Institute in Genova, Italy. She also did studies in Hospital Management at the National University of Distance Education in Costa Rica. Dr. Arguedas has been in practice for more than 30 years.

She is a Professor in Paediatrics at the University of Costa Rica, and has been the author of several articles and chapters in books. She has been the Director of the Department of Paediatric of the University of Costa Rica, and the Executive Director of the Center for Strategic Development, Research and Education of the Costa Rican Social Security System.

About the organisation



The National Children's Hospital Costa Rica was inaugurated on May 4, 1964 with the mission to "contribute to improving the health of the child population of the country by providing specialized and emergency care through comprehensive quality services, effectively, efficiently, with equality of opportunity". Since then, this noble institution has become the national standard for children's care and backs this with ongoing research into how they can better the health of Costa Rican children and become more efficient in delivering patient care. <https://www.ccss.sa.cr/hospitales?v=21>